

A LATENT CLASS APPROACH TO UNDERSTANDING EXPERIENCES OF
BULLYING VICTIMIZATION AMONG YOUTH IN FOUR LOW-RESOURCE
SETTINGS

by

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A dissertation submitted to Johns Hopkins University in conformity with the
requirements for the degree of Doctor of Philosophy

Baltimore, Maryland

June 2016

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ABSTRACT

Background. Bullying victimization is a very common form of aggression experienced by school-aged youth and a risk factor for poor psychosocial adjustment. Yet there is a lack of victimization research in low and middle income countries (LMIC), where cultural and contextual factors may influence victimization dynamics. The goal of this current research was to examine experiences and outcomes of peer victimization among adolescents in four LMIC.

Method. Analyses included data on 3,536 youth (aged 15) in the Young Lives study in Ethiopia, India, Peru, and Vietnam, who reported exposure to nine peer victimization behaviors as well as information on emotional difficulties, wellbeing, and risk behaviors. We examined prevalence of victimizing behaviors across countries and used Hurdle modelling to evaluate associations between victimization and sex, community context, and school enrollment. We then used latent class analysis (LCA) to identify patterns of victimization and psychosocial adjustment correlates of latent class.

Results. Physical victimization was substantially higher in India than elsewhere. Higher direct victimization among boys was observed everywhere but Peru. There were few sex differences in relational victimization. We found little variation in exposure by school status. Data supported a 2-class LCA model in Peru, 3-class in Ethiopia and Vietnam, and 4-class in India. Unlike the ordered classes produced elsewhere, the India model also produced two classes uniquely characterized by direct and indirect victimization. Boys were more likely than girls to be in the highly

victimized class in Ethiopia and India. Urban contexts were associated with increased risk in Ethiopia and Peru, and decreased risk in India and Vietnam. Emotional difficulties and alcohol use were strongly associated with victimization; more modest associations with wellbeing outcomes showed similar trends.

Discussion. Notable differences in victimization patterns highlight the need to better understand these experiences in LMIC, where factors such as forms of behavior, who is at risk, and where victimization occurs may vary. LCA patterns suggest that targeted youth are likely to experience multiple forms of victimization. Strong and consistent associations between victimization and psychosocial adjustment across countries demonstrate the need to recognize peer victimization as a serious public health issue in LMIC.

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ACKNOWLEDGEMENTS

The path I've taken through my career has been something of a wandering one, and my successful completion of this dissertation is due entirely to the support of a rich network of mentors, friends, and family I have encountered along the way.

First, I am forever grateful to my advisor, Judy Bass, both for giving me the chance to join this incredible program at Johns Hopkins and then for providing support and guidance every step along the way. Judy is a brilliant global mental health researcher and a truly wonderful mentor who models a blend of academic rigor, flexibility, patience, and humor that I aspire to emulate. She, Paul Bolton, and Laura Murray have together created a dynamic and engaging research group, AMHR, that has given me such a range of valuable experience and opportunities - I am a better researcher for having had the privilege to work under all three of them, and hope to continue working with this group throughout my career.

Other faculty also played a large role in my successful completion. Dr. Phil Leaf provided invaluable training and mentorship through the Child Mental Health Services training program. Drs. Lisa Townsend and Alden Gross have reviewed manuscripts and sat through many hours of advising meetings to help me work through challenges that arose. Dr. Catherine Bradshaw has also been instrumental in helping me conceptualize my research project, reviewing my progress, and promoting my work. You have my thanks.

I am grateful to have such a strong support network, both in and out of Hopkins. My colleagues in the department have become some of my dearest friends and most esteemed collaborators. Close friends and mentors from earlier stages of

my life have also continued provide encouragement and support: namely my dear friend Dr. Helena Spector, who is one of my most fervent supporters and the woman who originally encouraged me to pursue this degree; and Dr. Aubyn Fulton, my undergraduate [and beyond] mentor who has always been a staunch advocate for taking the road less traveled. They and others unmentioned have given me the courage and confidence to try, and - through modelling ethics, integrity, and scholarly inquiry - have built up in me the strong foundation needed to succeed.

My family – immediate, extended, and in-law – has also been incredibly patient and supportive. My parents promoted my academic pursuits from an early age, and made great sacrifices to give me the best opportunities they could. Sometimes they aren't quite sure exactly what it is that I do all day, but they follow my work with interest and have never stopped encouraging me. My sister, Kim, has looked out for me all along the way, while my younger sister and nieces have made me want to be a role model for what a girl can do when she sets her mind to it.

Lastly, to my husband Tho: there are no words to describe the love, strength, and encouragement you have given me throughout this process. You have made huge sacrifices in your own career to allow me to pursue mine, and have shown me how to forge my own path regardless of the barriers. You are patient and loving when I am in poor form, you balance a million different responsibilities every day...and we both know I probably would have wasted away at some point if not for your fantastic cooking! I am so blessed to be half of the Drs. Nguyen and can't wait for our next adventure. *Cuộc sống vẫn đẹp ... và em sẽ yêu anh mãi mãi.*

TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGEMENTS.....	vi
LIST OF TABLES.....	xii
LIST OF FIGURES.....	xiv
CHAPTER 1: INTRODUCTION.....	1
1.1 STATEMENT OF THE PROBLEM.....	1
1.2. PUBLIC HEALTH SIGNIFICANCE.....	4
1.3. SPECIFIC AIMS.....	6
1.4. ORGANIZATION OF THE DISSERTATION.....	6
1.5. REFERENCES.....	10
CHAPTER 2: BACKGROUND AND STUDY CONTEXT.....	17
2.1. BACKGROUND.....	17
2.1.1. BULLYING IS A GLOBAL PROBLEM.....	17
2.1.2. VICTIMIZATION IS A SERIOUS PUBLIC HEALTH ISSUE.....	19
2.1.3. RISK AND PROTECTIVE FACTORS FOR BULLYING VICTIMIZATION.....	20
2.1.4. RISK FACTORS IN LOW AND MIDDLE-INCOME COUNTRIES (LMIC).....	25
2.2. OVERVIEW OF THE STUDY CONTEXTS.....	27
2.2.1. ETHIOPIA.....	30
2.2.2. INDIA.....	32
2.2.3. PERU.....	34
2.2.4. VIETNAM.....	36
2.3. BULLYING VICTIMIZATION IN THE STUDY CONTEXTS.....	38
2.3.1. ETHIOPIA.....	38
2.3.2. INDIA.....	39
2.3.3. PERU.....	40
2.3.4. VIETNAM.....	41
2.4. REFERENCES.....	43
CHAPTER 3: METHODS.....	59
3.1. DATA SOURCE.....	59
3.1.1. OVERVIEW OF THE YOUNG LIVES STUDY.....	59
3.1.2. SAMPLE FOR THE CURRENT STUDY.....	61

3.2. CROSS-CULTURAL RESEARCH APPROACH	62
3.3. MEASUREMENT ISSUES	64
3.3.1. BULLYING OR PEER VICTIMIZATION?	64
3.3.2. CREATING MEANINGFUL EXPOSURE CATEGORIES.....	67
3.3.3. COMPARABILITY OF MEASURES	69
3.4. METHODS SYNTHESIS	71
3.4.1. AIM 1: EXPLORATORY ANALYSIS AND HURDLE REGRESSION	72
3.4.2. AIM 2: LATENT CLASS ANALYSIS AND LATENT CLASS REGRESSION	73
3.4.3. AIM 3: LATENT CLASS ANALYSIS WITH DISTAL OUTCOMES	76
3.5. RESEARCH ETHICS	77
3.6. REFERENCES	78
CHAPTER 4: PREVALENCE OF BULLYING BEHAVIORS AND CORRELATES OF REPEAT PEER VICTIMIZATION IN FOUR LOW-RESOURCE COUNTRIES.....	85
4.1. ABSTRACT.....	85
4.2. INTRODUCTION	86
4.3. METHODS	92
4.3.1. STUDY DESIGN AND SAMPLE	92
4.3.2. MEASURES.....	93
4.3.3. STATISTICAL ANALYSIS	94
4.4. RESULTS	96
4.4.1. BULLYING VICTIMIZATION PREVALENCE	97
4.4.2. INDIVIDUAL BEHAVIOR PREVALENCE	98
4.4.3. DEMOGRAPHIC CORRELATES OF VICTIMIZATION.....	100
4.5. DISCUSSION	107
4.5.1. INDIVIDUAL BEHAVIORS.....	107
4.5.2. DEMOGRAPHIC CORRELATES OF VICTIMIZATION.....	110
4.5.3. LIMITATIONS	112
4.5.4. CONCLUSIONS	114
4.6. REFERENCES	115
CHAPTER 5: A LATENT CLASS APPROACH TO UNDERSTANDING PATTERNS OF PEER VICTIMIZATION IN FOUR LOW-RESOURCE SETTINGS.....	125
5.1. ABSTRACT.....	125
5.2. INTRODUCTION	126
5.3. METHODS	129

5.3.1. SAMPLE	129
5.3.2. MEASURES.....	130
5.3.3. STATISTICAL ANALYSIS	131
5.4. RESULTS	134
5.4.1. SAMPLE CHARACTERISTICS.....	134
5.4.2. MULTIGROUP ALIGNMENT	136
5.4.3. MODEL SELECTION	137
5.4.4. CLASS DESCRIPTIONS.....	139
5.4.5. PREDICTORS OF CLASS MEMBERSHIP	142
5.4.6. LATENT CLASS VALIDATION	144
5.5. DISCUSSION	144
5.5.1. CLASS ENUMERATION AND DESCRIPTIONS.....	145
5.5.2. SEX DIFFERENCES.....	149
5.5.3. COMMUNITY CONTEXT DIFFERENCES.....	151
5.5.4. CAREGIVER IDENTIFICATION OF VICTIMIZATION	153
5.5.5. LIMITATIONS	154
5.5.6. CONCLUSIONS	155
5.6. REFERENCES	157
CHAPTER 6: COMPARISON OF ADOLESCENT PSYCHOSOCIAL ADJUSTMENT ACROSS LATENT CLASSES OF PEER VICTIMIZATION IN FOUR LOW-RESOURCE SETTINGS.....	167
6.1. ABSTRACT.....	167
6.2. INTRODUCTION	168
6.2.1. PATTERNS OF BULLYING VICTIMIZATION.....	168
6.2.2. VICTIMIZATION AND PSYCHOSOCIAL ADJUSTMENT IN THE STUDY SETTINGS.....	172
6.3. METHODS	174
6.3.1. SAMPLE	174
6.3.2. MEASURES.....	174
6.3.3. STATISTICAL ANALYSIS	180
6.4. RESULTS	182
6.4.1. SAMPLE CHARACTERISTICS.....	182
6.4.2. PSYCHOSOCIAL ADJUSTMENT OUTCOMES	183
6.5. DISCUSSION	188
6.5.1. KEY FINDINGS	188
6.5.2. LIMITATIONS	191

6.5.3. CONCLUSIONS	192
6.6. REFERENCES	194
CHAPTER 7: DISCUSSION.....	209
7.1 SUMMARY OF FINDINGS	209
7.1.1. THE COMMON EXPERIENCE OF BULLYING VICTIMIZATION	209
7.1.2. BEHAVIOR DISTINCTIONS ACROSS COUNTRIES	210
7.1.3. DEMOGRAPHIC CORRELATES OF VICTIMIZATION	212
7.1.4. VICTIMIZATION AND PSYCHOSOCIAL ADJUSTMENT.....	214
7.2. IMPLICATIONS FOR FUTURE RESEARCH.....	216
7.3. IMPLICATIONS FOR PUBLIC HEALTH POLICY AND PRACTICE	221
7.4. STRENGTHS AND LIMITATIONS.....	224
7.5. CONCLUSION	229
7.6. REFERENCES	230
APPENDIX A: DESCRIPTION OF VARIABLES USED.....	245
A.1. PEER VICTIMIZATION.....	245
A.2. DEMOGRAPHICS	246
A.3. PSYCHOSOCIAL ADJUSTMENT	246
APPENDIX B: MEASUREMENT INVARIANCE ACROSS COUNTRIES.....	249
B.1. MEASUREMENT INVARIANCE OF THE PEER VICTIMIZATION SCALE.....	249
B.2. MEASUREMENT INVARIANCE OF THE SDQ EMOTIONAL DIFFICULTIES SCALE.....	251
B.3. REFERENCES.....	253
CURRICULUM VITAE.....	255

LIST OF TABLES

CHAPTER 2

Table 2.1. Human Development Index (HDI) and related statistics for the study countries.....	28
Table 2.2. Education structure and access by country.....	29

CHAPTER 3

Table 3.1. Cohort demographics at Round 1.....	59
Table 3.2. SAHA Peer Victimization Scale.....	66

CHAPTER 4

Table 4.1. Sample demographics by country.....	96
Table 4.2. Comparison of classification methods for assessing prevalence of bullying victimization.....	98
Table 4.3. Percent of youth meeting cutoff of repeat experiences.....	101
Table 4.4. Correlates of bullying victimization exposure and severity by total score and subtype.....	102
Table 4.5. Conditional mean difference between levels of covariates.....	106

CHAPTER 5

Table 5.1. Sample demographics by country.....	134
Table 5.2. Forms of victimization experienced by sex and community context.....	135
Table 5.3. Latent class analysis fit indices by sample.....	138
Table 5.4. Relative odds of class membership by sex and community context.....	143

Table 5.5. Caregiver report of youth bullying victimization by class	145
---	-----

CHAPTER 6

Table 6.1. Description of latent classes by country	177
--	-----

Table 6.2. Sample demographics by country	183
--	-----

Table 6.3. Polychoric correlations between psychosocial adjustment variables by sample	184
--	-----

Table 6.4. Psychosocial adjustment scores by class	186
---	-----

APPENDIX B

Table B.1. Factor loadings and approximate measurement invariance for SAHA-PVS categorical items	250
--	-----

Table B.2. Factor loadings and approximate measurement invariance for SAHA-PVS binary items	251
---	-----

Table B.3. Factor loadings and approximate measurement invariance for SDQ items	252
---	-----

LIST OF FIGURES

CHAPTER 3

Figure 3.1. Study sites within each country.....	60
---	----

CHAPTER 4

Figure 4.1. Percentage of boys and girls reporting two or more experiences of each behavior.....	99
--	----

CHAPTER 5

Figure 5.1. Conditional item response probabilities by country.....	141
--	-----

Chapter 1: INTRODUCTION

1.1 STATEMENT OF THE PROBLEM

Bullying victimization – typically defined as repeated exposure to negative actions over time by one or more peers in the context of a power imbalance¹ – is among the most common forms of aggression experienced by school-aged children.^{2,3} Exposure to bullying is a serious public health problem with well-documented psychosocial and health consequences in adolescence⁴⁻¹⁰ and lasting effects on mental health, wellbeing, and social functioning in adulthood.¹¹⁻¹⁴

Most bullying research has focused on high-income countries (HIC), neglecting the nearly 90% of the world's young people residing in low-and middle-income countries (LMIC).¹⁵ This remains the case, even though large multi-country studies such as the Health Behavior of School-Aged Children survey (HBSC)¹⁶ and Global School-Based Student Health Survey (GSHS)¹⁷ suggest that approximately one in three children is bullied worldwide,¹⁸ and that victimization is associated with poor psychosocial adjustment and risk behaviors in these settings.¹⁹⁻²¹ These studies also highlight wide variations in victimization prevalence, ranging from as low as 7% to as high as 70% across studied countries.¹⁸ Reasons for this variation are not clear, but don't appear to be easily explained by regional differences or country-level indicators of wealth or social equality.²⁰

One of the critical issues impacting our ability to understand factors contributing to the wide variation in prevalence of bullying victimization in LMIC is the measurement approach used. The above findings from the GSHS study – and

therefore the bulk of existing literature on bullying in LMIC – rely on a *definition-based*^{22,23} assessment of bullying victimization. In this approach youth are provided a description of what bullying is (e.g.: “Bullying occurs when a student or group of students say or do bad and unpleasant things to another student. It is also bullying when a student is teased a lot in an unpleasant way or when a student is left out of things on purpose. It is not bullying when two students of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.”¹⁷) and are asked a single question regarding how frequently they have been bullied over the past 30 days.¹⁷ Using this approach makes it both unclear what behaviors are actually being experienced in these settings, and adds confusion where there may be meaningful language differences in the terms used to define bullying.²⁴ Therefore, we cannot determine whether variations found in the GSHS research are due to cultural or contextual factors influencing true prevalence, or whether the differences are due to variation in the way bullying is defined.

Even if the same behaviors are assessed across contexts, the relative contribution of a behavior or pattern of behaviors to overall bullying victimization prevalence may differ. For example, a few studies based on the GSHS have examined a follow-up item asking which behavior the respondent most frequently experienced. By recording only a single behavior these studies are unable to capture the high correlation between forms of victimization, but already begin to illustrate differences in most frequently experienced behaviors across settings in Latin America, the Caribbean, and Southeast Asia.^{25,26} Measuring overall victimization exposure rather than exposure to specific forms or behaviors limits

our ability to understand how different behaviors or patterns of exposure may be differently associated with poor health outcomes,²⁷ and how factors such as culture and context may influence experiences and outcomes of victimization.²⁸⁻³⁰

This lack of understanding has led to calls for greater exploration of different forms of violence and aggression.³¹ Researchers have highlighted the need to understand how factors such as age, gender, culture, and context influence risk of exposure to different forms of victimization.³¹ For example, research in HIC suggests an overall decrease in victimization by age, a potential shift from direct to relational aggression through adolescence, and sex differences in which physical aggression is more common among boys while relational aggression is more common among girls.^{32,33} While similar research in LMIC is sparse, these trends by age and sex have already been called into question. For example, higher prevalence among boys and girls has been observed in North Africa³⁴ but not in the Caribbean^{25,35} or sub-Saharan Africa.^{18,19} In South and East Asia, a UNICEF desk review suggested that girls, rather than boys, may be the more common victims of bullying.³⁶ Researchers have also found either an increase³⁷ or no change in bullying by age in Sub-Saharan Africa¹⁹, Latin America and the Caribbean;²⁵ in Thailand, bullying decreased with age in boys, but not girls.²⁶ These findings illustrate the need for more research to clearly understand victimization dynamics in diverse cultures and contexts.

Additional social and contextual factors that are not typically considered in bullying research in HIC may also be of particular relevance for understanding victimization risk in LMIC. Perhaps most critically, nearly all research in LMIC to

date has been conducted in school-based samples. However, in LMIC settings where low educational attainment is widespread, a large proportion of youth may not be in school, and youth who remain in school through adolescence are likely to be different in meaningful ways from their non-completing peers. It is unclear how school attendance in these settings may alter the dynamics of peer aggression, and how this may be context specific; youth in one setting may be out of school because they have entered the work force and are potentially at decreased risk of victimization, whereas unenrolled youth in another context may reflect a higher risk group of socially disengaged or street youth. Focusing only on adolescents in school would therefore result in a biased understanding of peer interaction and risk for peer victimization in the general youth population.³⁸

Likewise, rapid urbanization in LMIC is changing the contexts in which young people develop, with urban environments represent vastly different social contexts than typically more traditional rural settings. Differences in daily activities and mobility, community cohesion, parental monitoring, and access to resources and technology may influence patterns of youth behavior and social interactions, resulting in potentially differential risk of victimization or differences in forms of victimization experienced.³⁹

1.2. PUBLIC HEALTH SIGNIFICANCE

Improving our understanding of modifiable risk factors across the life course is one of the Grand Challenges in Global Mental Health.⁴⁰ A public health approach to bullying prevention requires defining the problem and determining risk and

protective factors.³ A definition of the problem requires clearly understanding *who* is victimized, *what* type of victimization they experience, and *when* and *where* this victimization occurs, as well as *why* and *how* is it occurring.³ Given the dearth of literature on this subject in LMIC, the current study will focus primarily on the “*who*” and “*what*” components of this definition—who are the children at risk of bullying victimization in each country, what are their experiences, and how are these experiences similar or different across settings? I will also begin to explore the “*where*” question by expanding the concept of bullying victimization beyond the classroom setting, to understand whether bullying is really a school-based phenomenon in countries with a high prevalence of out-of-school youth.

Expanding the scope and content of bullying and peer victimization research in LMIC is critical for a number of reasons. First, research is needed to highlight the public health impact of bullying in contexts where public funding for prevention is minimal, programs and interventions have not been tested, and the problem of bullying victimization may go largely unrecognized. Additionally, different patterns of exposure may be differently associated with poor health outcomes,²⁷ and factors such as culture and context may influence experiences and outcomes of bullying.²⁸⁻
³⁰ Expanded assessment is needed to understand what behaviors victims are most likely to be exposed in a particular setting, how these behaviors occur together as a pattern of victimization experienced by youth, and how these patterns may predict specific adjustment problems. This information would improve our ability to identify problematic peer relationships between youth and to tailor prevention initiatives to address problems relevant within a particular setting.

1.3. SPECIFIC AIMS

The goal of this dissertation research was to examine experiences, demographic correlates, and outcomes of bullying victimization among adolescents (all 15-years old) in four LMIC settings. Specifically, we aimed to:

1. Examine the total and per-item prevalence of bullying victimization among 15-year old youth in each study sample, and identify correlates of victimization by country.
2. Empirically identify groups of youth with different victimization patterns at age 15 by country and explore child sex and community context as predictors of group membership.
3. Assess the cross-sectional association between patterns of bullying victimization (at age 15) and psychosocial adjustment.

1.4. ORGANIZATION OF THE DISSERTATION

Our approach to the above aims balances the need to situate our findings within the existing body of literature and the need to move beyond this literature to gain a deeper understanding of what bullying victimization looks like cross-culturally. Given the limitations of existing literature, we approached the question using a rough description of the phenomenon of bullying victimization by measuring nine behaviors commonly conceptualized as the visible component of what is in fact a relationship dynamic.¹ We take a cross-cultural, etic approach using comparable analyses in each country rather than conducting a qualitative, in-depth exploration of bullying within a single setting. The assumption made is that the underlying

construct of bullying is universal to the extent that these problematic peer relations occur around the world and would result in increased experiences of the nine behaviors we were able to record.

The data used comes from Young Lives (YL),⁴¹ a fifteen year longitudinal study of child poverty in Ethiopia, India, Peru, and Vietnam that began in 2002 and is ongoing. Nearly 4,000 children were recruited at age 8 and have been followed prospectively. In 2009, when the youth were 15 years old, they reported on a number of sensitive issues including peer victimization, mental health, and risk taking behaviors, which are used in the current study. Of particular importance, the youth reported exposure to a set of nine victimizing behaviors, rather than responding to an overall bullying question.

The three aims included in this study draw on a variety of approaches to explore these nine behaviors across the four countries. Chapter 2 provides a summary of existing literature and a broad overview of the four countries included in the current study. In chapter 3, we describe the YL study samples and discuss a number of methodological considerations with implications for bullying and cross-cultural research. Chapters 4-6 are then dedicated to each of the three study aims.

In Chapter 4, we examine prevalence of specific forms of victimization across the countries and explores demographic correlates of victimization and victimization subtypes by country. The primary statistical approach is the use of Cragg hurdle regression,⁴² which allows for simultaneous modeling to evaluate both predictors of exposure and, among the exposed, severity of victimization. This analysis follows a variable-centered approach similar to that taken in most existing

research, which is useful for expanding the knowledge base to include these settings while situating findings within a larger body of literature. In general, Aim 1 seeks to answer the questions raised by the wide prevalence estimates in existing research by examining, across individuals, what bullying victimization “looks like” in a given country.

Aim 1 does not fully account for the high correlation of victimizing experiences within individuals. We address these correlations in Chapter 5 by transitioning to a person-centered approach, using latent class analysis (LCA) to explore how the country-level experiences identified in Aim 1 actually manifest within individuals and latent class regression (LCR) to examine relationships between latent classes and demographic predictors. LCA is based on the assumption that an underlying latent construct accounts for an individual’s pattern of responses to a set of observed, discrete variables), making it a useful approach to classify subgroups of individuals with similar response patterns.⁴³ The question of interest in Aim 2 is whether unique patterns of experience emerge in each of the four countries, and the extent to which these patterns and their demographic correlates are similar across settings.

In Chapter 6, we extend the models developed in Aim 2 to examine cross-sectional associations between the identified latent classes and a number of psychosocial adjustment indicators. The statistical approach here builds on the latent class models created above by adding auxiliary variables to the model as distal outcomes. The question this aim seeks to answer is whether particular

patterns of victimization are associated with greater impairment than others, as measured by psychosocial adjustment indicators.

Finally, the discussion in Chapter 7 seeks to synthesize the approach, findings, and implications of the three aims in terms of public health research, policy, and practice.

Given the high prevalence of bullying and problematic peer relationships worldwide, it is critical to improve on our current lack of understanding of these relationship dynamics in LMIC. The research undertaken in this dissertation serves to contribute to this knowledge and lay the foundation for ongoing longitudinal research in these four settings. Knowledge gained through this research can be used to improve identification of victimized youth and tailor interventions to address these problematic peer relationships. We hope this quantitative approach will also serve as a jumping off point for future qualitative, in-depth research to build a more complete picture of victimization in these settings.

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CHAPTER 2: BACKGROUND AND STUDY CONTEXT

2.1. BACKGROUND

2.1.1. BULLYING IS A GLOBAL PROBLEM

Bullying is among the most common forms of aggression experienced by school-aged children.^{1,2} Bullying victimization is traditionally defined as repeated exposure to negative actions over time by one or more peers, with key features of direct or indirect aggression, repetition, and an imbalance of power.³ Direct aggression may include physical and verbal aggression as well as attacks on property, while indirect or relational bullying involves social manipulation.⁴

In 1999, a book presenting a cross-national perspective on the nature of school bullying was published, which included 21 country-specific chapters on predominantly high income countries and a final chapter dedicated to the whole of “the developing world”.⁵ Even in that single chapter, the author was unable to report quantitative data on the problems of bullying in low and middle income countries (LMIC). The author highlighted instead the increased risk posed to students by the multiple threats of poverty and political instability that results in a breakdown of institutional and social structures, and called for greater initiatives to understand bullying in LMIC while taking into account the sociocultural realities of these resource-poor settings.

Fifteen years later, major cross-national studies have confirmed that bullying is a global problem. Two key initiatives that provide data on the global prevalence of bullying are the Health Behavior in School-aged Children Survey (HBSC)⁶ and the

Global School-Based Student Health Survey (GSHS).⁷ The HBSC collects data every four years on youth age 11, 13, and 15 across 44 countries in Europe and North America. The GSHS, an initiative led by the WHO in collaboration with UNICEF, UNESCO UNAIDS, and the CDC, has now been conducted among youth age 13-17 in 94 predominantly LMIC across Europe, the Americas, Africa, the Middle East, Southeast Asia and the Pacific (although not all countries include a question on bullying). In both of these studies, a standardized description of bullying is given, and then students are asked to report the frequency of victimization over the past one (GSHS) or two (HBSC) months. The GSHS bullying question also includes a follow-up question asking what behavior the respondent experienced most often, with the option to select a single item from a list of behaviors.

A combined analysis of data from 218,000 youth across 66 countries in both surveys in 2001-2002 showed that roughly a third of youth reported recent bullying victimization (32.1% in the HBSC, and 37.4% in the GSHS), and in fact only three countries reported prevalence of bullying victimization under 20% for both boys and girls.⁸ In these studies, the variation across countries was substantial. For boys, prevalence of bullying ranged from a low of 7.1% in Tajikistan to 70.2% in Zimbabwe; for girls, the range was from 14% in Sweden and the Czech Republic to 67.1% in Zambia.⁸ Of over 200,000 adolescents across 40 countries participating in the 2005/2006 HBSC survey, roughly one in four had been involved in bullying, either by bullying others (10.7%), being bullied (12.6%) or being both a perpetrator and victim of bullying (3.6%).⁹ Across countries, any involvement in bullying ranged from less than 10% in Sweden (8.6% of boys and 4.8% of girls) to a high of roughly

40% in Lithuania (45.2% in boys and 35.8% in girls).⁹ Likewise, of the over 91,000 youth across 19 GSHS surveys that included a question on bullying between 2003 and 2006, 34.2% (36% of boys, 32.6% of girls) reported being bullied within the last month.¹⁰ Country-specific prevalence ranged from 7.8% in Tajikistan to 60.0% in Zambia, and Tajikistan was the only country to report prevalence under 20%.

2.1.2. VICTIMIZATION IS A SERIOUS PUBLIC HEALTH ISSUE

A review of the impact of bullying on health and wellbeing has led researchers to conclude that bullying victimization predicts future problems with a clarity and consistency that is rare in developmental research.¹¹ Indeed, while prevalence may vary by country, the public health issues associated with bullying victimization are quite consistent worldwide. Victimization is associated with concurrent emotional, health, school, and social problems, somatic complaints and suicidal ideation.¹¹⁻¹⁷ These outcomes are often referred to collectively in the literature as *poor psychosocial adjustment*.^{10,12,14,18} Although the bulk of literature continues to represent high income countries (HIC), researchers have used the GSHS data to illustrate the associations between bullying and a range of psychosocial problems (e.g.: mental health problems, substance use, sexual risk taking, academic problems, other violence) in LMIC countries including Botswana, Kenya, Morocco, Namibia, Swaziland, Uganda, Tanzania, Zambia, Zimbabwe, Guyana, Venezuela, China, Philippines, Tajikistan, Jordan, Lebanon, Malaysia, the Seychelles, Ghana, Egypt, Thailand, Benin, China, Pakistan, Macedonia, St. Lucia, Trinidad, Tunisia, Uruguay and Yemen.^{10,19-33}

A growing body of longitudinal research—almost exclusively from high-income settings—is making the lasting effects of victimization on mental health, wellbeing, and social functioning throughout the lifespan increasingly clear. Earlier victimization is predictive of higher and more persistent internalizing problems, low academic achievement, poor social relations, and increased risk of self-harm in adolescence.^{34–39} A meta-analysis of 12 prospective longitudinal studies concluded that victimization increased risk of later violence by roughly a third.⁴⁰ Beyond depression, young adults with a history of bullying victimization are at increased risk of a number psychiatric problems,⁴¹ lower educational attainment and poorer partner relationships¹⁸ and poorer health and higher risk of poverty.⁴² A meta-analysis of 29 studies suggests that the risk of depression later in life is roughly doubled for victims of childhood bullying.⁴³ A longitudinal cohort study following children through age 50 concluded that the effects of childhood victimization were similar to those of being placed in out-of-home care.⁴⁴ The lack of longitudinal research on bullying in LMIC limits our ability to understand how bullying impacts developmental trajectories in contexts exposed to numerous developmental risks; however, available studies do suggest longitudinal impacts of bullying victimization on psychosocial adjustment in adolescence.^{45,46}

2.1.3. RISK AND PROTECTIVE FACTORS FOR BULLYING VICTIMIZATION

A number of reviews on the ecological factors influencing bullying and victimization have been published,^{47–50} A meta-analysis of 153 studies conducted in HIC since 1970 suggests victims are likely to have internalizing and externalizing symptoms, poor social and problem-solving skills, and negative self-schema; they

are also more likely to come from communities and schools with negative climates.⁵⁰ Here, we summarize findings for a few of the most frequently examined characteristics. Again, nearly all of the research on which these reviews have been based was conducted in European and North American settings. As bullying exists within a social context, risk and protective factors for bullying exposure may differ in type and prevalence across countries and cultures with different social values, norms, and behaviors.⁵¹ For example, cultural values may promote an in-group/out-group dynamic that heightens risk of victimization or decreases availability of supports.⁵² Likewise, a context of relative inequality or a history of communal violence may foster conditions for social dominance.⁵³ An informed understanding of locally relevant risk and protective factors is imperative for guiding effective prevention efforts.

Developmental Level. Research often demonstrates a rise in bullying prevalence from middle childhood to a peak in early adolescence, which then drops off in high-school age youth.^{13,47} There has been some support for theories that younger children are at higher risk simply because there are more older kids to bully them, and also because they lack the social development to effectively respond to bullying behaviors.⁵⁴ Others suggest that it is reporting, rather than actual victimization, that decreases with age.⁵⁵ Pre-teens may be less able to distinguish bullying from physical fighting, for example, whereas adolescents are able to make this distinction and also discriminate between verbal, physical, and relational bullying.⁵⁶ Even so, a meta-analysis of risk suggests that age does little to predict bullying victimization, although the association between victimization and

internalizing problems increases with age.⁵⁰ The small effect size may be partly due to differences across contexts; for example, of the 40 countries in the 2005/6 HBSC study, victimization prevalence decreased by age in 30 countries for boys and 25 countries for girls.⁹

Child Sex. Another common finding is that boys are involved in bullying (both as victim and perpetrator) at higher rates than girls, and that boys engage in direct while girls engage in indirect forms of aggression.¹³ Like age, these findings become more complicated on closer look across settings. In the 2005/6 HBSC study, boys were *perpetrators* of bullying at higher rates than girls in all 40 countries, but girls reported higher *victimization*.⁹ The 66-country combined HBSC/GSHS study showed that while average prevalence was slightly higher among boys than girls, differences were negligible in a majority of the countries and prevalence was higher among girls in 15 countries.⁸ A meta-analysis of 107 studies examining sex differences in types of aggression supported the conclusion that boys engaged in more direct aggression than girls, and that the sex difference was greater for physical than verbal forms of direct aggression. On the other hand, there was very little support for a meaningful difference in the use of indirect forms of aggression by sex.⁵⁷ While sex differences may exist, these should not be assumed to hold across settings.

Aside from potential differences in prevalence, the influence child sex has on the associated harm and protective factors for victimization also present a complex picture. For example, Turner and colleagues explored sex influences in 1,874 US students and found that exposure to any form of bullying victimization increased

depression and suicidal ideation for boys and girls alike, but that particular types of victimization influenced the strength of the relationship differently by sex.⁵⁸ A longitudinal study involving students of 17 schools in the UK showed that sex predicted chronicity of victimization, such that direct victimization was highly stable over time for girls, but not boys; no such sex difference was found for relational victimization.⁵⁹ On the other hand, a similar study in the US reported that boys were more likely to be chronically victimized than girls. Looking at resilience, Sapouna and Wolke report that bullied youth with low depression scores were more likely to be boys, while those with low delinquency were more likely to be girls.⁶⁰

Social Support. Peer relationships become increasingly important to young people as they transition to adolescence; these relationships can play an important risk or protective role, depending on the dynamics of these relationships.⁶¹ Bullying victims often experience social isolation and peer rejection,⁵⁰ have low social support¹⁷ and consistently report negative perceptions of peer relationships at school¹⁴.

While negative social dynamics may increase risk of victimization, social support may also serve an important role in protecting youth from victimization or buffering its effects. Parental communication to solicit information from youth about risks, monitor and set limits on a youth's whereabouts and activities, and create a relationship that fosters spontaneous disclosures by youth can be protective against victimization or act to buffer against its effects.⁶² Social connectedness to other supportive adults may also serve as a protective buffer against the negative outcomes of bullying.⁶³ Like other risk and protective factors,

influence of social support is not universal; parental and school support may be received differently by age and sex,⁶⁴ or may be protective against some outcomes but not others,⁶⁵ and either too much or too little peer support may be associated with worse outcomes.⁶⁶

Other Family, School, and Community Factors. The contexts in which children develop are also thought to shape a child's risk of victimization, influencing individual social and coping skills, availability of protective resources, and the social dynamics of the environment in which peer violence can occur. In North America, boy from overprotective, close-knit families that prevent them from developing autonomy or skills to manage conflict may be at increased risk of victimization; the same may be true for girls who come from homes that are hostile and rejecting, leaving them at a disadvantage for regulating emotions or communicating with their peers.⁶⁷ Kids who are exposed to violence in the home may also be at greater risk of bullying victimization.^{50,68,69}

A negative school climate in which students' lack a strong sense of belonging, feel disrespected, or experience unfair treatment from teachers and administrators has also been found to be associated with increased victimization in a recent meta-analysis.⁵⁰ Even size of school has been implicated, with larger schools predicting greater bullying involvement; perhaps this reflects ability of teachers and administrators to effectively monitor student behavior.⁶⁸

Communities with higher rates of violence and crime and lower socioeconomic status (SES) also lend themselves to increasing the risk of victimization for the youth who live there.^{50,69} While the relationship between

victimization and low SES has been confirmed in meta-analyses, the association is small and it is unclear if this is a direct relationship or mediated by negative family, school, and community dynamics that are concentrated in disadvantaged areas.⁷⁰ This association may also be a function of *relative* inequality; an analysis of SES in the 2001/2 HBSC in 35 countries showed that it was not simply that victimization prevalence was higher among poorer adolescents, but that poorer adolescents in schools or countries with greater socioeconomic inequality were at higher risk.⁷¹

2.1.4. RISK FACTORS IN LOW AND MIDDLE-INCOME COUNTRIES (LMIC)

When studying mental and behavioral health cross-culturally, it is important to consider how culture and context can influence thoughts, feelings, and behaviors rather than assuming that findings can be equally applied in new contexts.^{72,73} As researchers have illustrated that country-level indicators of wealth or social equality are not particularly useful in explaining the wide differences in bullying prevalence observed in multi-country studies,³³ findings of variations in risk and protective factors by culture and context highlight the need to clearly understand bullying dynamics in LMIC. This understanding is important to improve identification of young people who are at risk for victimization and to tailor interventions accordingly—particularly in a context of risks that may not be as relevant in HIC settings. For example, the HIV epidemic in South Africa presents important risks to youth—such as AIDS-orphanhood and related stigma—that are not typically explored in bullying research. In this context, experiencing AIDS-related stigma has not only been highly associated with bullying victimization, but has been shown to moderate the protective effect of peer support.⁶⁹ Longitudinally,

researchers have demonstrated that bullying mediates the effect of familial HIV on youth mental health outcomes,⁷⁴ and interacts with AIDS-orphanhood to increase risk of mental disorder.⁷⁵ However the dearth of LMIC-specific literature remains a critical limitation to understanding similar context-specific risk and protective factors in these settings.

Some research has illustrated regional differences in how bullying is experienced by age and sex. While prevalence is higher among boys than girls in North Africa,⁷⁶ those same sex differences aren't found in the Caribbean^{77,78} or sub-Saharan Africa.^{8,32} In South and East Asia, a UNICEF desk review suggests that girls are more often victims of bullying, as are ethnic minorities or people of low caste.⁷⁹ Contrary to typical findings, researchers have found either an increase⁸⁰ or no change in bullying by age in Sub-Saharan Africa,³² Latin America and the Caribbean;⁷⁷ in Thailand, bullying decreased with age in boys, but not girls.²⁶ Other GSHS study findings suggest that the protective role of parental monitoring may vary.⁷⁶

Only a few studies have examined particular forms of bullying victimization in LMIC, and most of these are limited by using the GSHS follow-up question of only the most frequent type experienced. Of 15 countries in Latin America and the Caribbean that were studied, girls in 14 countries and boys in 4 countries reported most commonly being made fun of for their appearance, while in 10 other countries boys were most likely to be victims of physical aggression.⁷⁷ In Thailand, boys were most frequently victims of physical aggression, but girls were most frequently exposed to sexual jokes, comments, and gestures.²⁶ In China, researchers compared

ethnocultural bullying to other forms and discussed that victimization due to religious differences may be associated with increased health risk for both sexes, while bullying due to ethnic differences was associated with depression in girls, but not in boys.³⁰

2.2. OVERVIEW OF THE STUDY CONTEXTS

Ethiopia, India, Peru, and Vietnam were selected for inclusion in Young Lives to reflect a diversity of culture and context while sharing challenges common to LMIC.⁸¹ The 2002 and 2010 United Nation Development Program Human Development Reports^{82,83} illustrate some of the challenges these countries have been facing over the study youths' lifetimes (Table 2.1). By 2002, Ethiopia was slipping back on progress made toward the millennium development goals (MDG) and had high mortality, adult illiteracy, and child malnutrition; India was showing mixed progress and also had high adult illiteracy and child malnutrition; Peru was on track to meet all MDGs except for safe access to water; and Vietnam had relatively lower levels of mortality, child malnutrition, and adult illiteracy.⁸² By 2010, all but Vietnam had risen in the human development index (HDI) rankings; life expectancy, per capita income, and secondary school enrollment had risen across the board.⁸³ However, in comparing basic statistics we see a gradation of overall disadvantage across the four countries, with wide differences in per capita income, literacy, school enrollment, and life expectancy. Additionally, the Gini coefficient—a measure of relative income equality ranging from 0-100 (0 = perfect equality, 100 = perfect inequality)—illustrates that these countries have varying

levels of inequality. For example, Peru, which appears to be doing well on other indicators, continues to suffer from serious and apparently rising inequality, while Ethiopia is nearly as equal as Sweden, a country known for equality and strong social programs.⁸³

Table 2.1. Human Development Index (HDI) and related statistics for the study countries

Year	Ethiopia		India		Peru		Vietnam	
	2002	2010	2002	2010	2002	2010	2002	2010
HDI Rank	168	157	124	119	82	63	109	113
HDI	0.327	0.328	0.577	0.519	0.747	0.723	0.688	0.572
Life Expectancy (at birth)	46.9	56.1	63.3	64.4	68.8	73.7	68.2	74.9
Gross National Income per capita (\$)	668	992	2,358	3,337	4,799	8,424	1,996	2,995
Gini Index	40.0	29.8	37.8	36.8	46.2	50.5	36.1	37.8
Adult literacy rate	39.1	35.9	57.2	62.8	89.9	89.6	93.4	92.5
Net Secondary school enrollment (%)	16	25.3	39	57.0 ^a	61	75.9	49	62.3
Homicide rate (per 1000)		6.4		2.8		3.2		1.9

*Adapted from the 2002 and 2010 UNDP human development reports^{82,83}

^a Gross; report did not provide net

According to the FHI 360 Educational Policy and Data Center,⁸⁴ the school structure for all four countries can be divided into primary, lower secondary, and upper secondary school, although the number of years and the official ages at each level vary somewhat. Primary school completion ranges from a high of 94% in Vietnam to a low of 24% in Ethiopia. The percentage of out-of-school youth age 15-18 ranges from 17% in Vietnam to 51% in India. However, looking at who these youth are, there appears to be very little sex difference in Ethiopia or Peru, whereas

a higher percentage of girls than boys are out of school in India and the reverse is true in Vietnam. In all countries, rural and poor youth are more likely to be out of school than their urban and wealthier counterparts (Table 2.2).⁸⁴

Table 2.2. Education structure and access by country

	Ethiopia	India	Peru	Vietnam
School structure, in total years (official ages)				
Primary	6 (7-12)	5 (6-10)	6 (6-11)	5 (6-10)
Lower Secondary	4 (13-16)	3 (11-13)	3 (12-14)	4 (11-14)
Upper Secondary	2 (17-18)	4 (14-17)	2 (15-16)	3 (15-17)
% Incomplete Primary School	76	43	Unavailable	6
Out of School Youth age 15-18 (%)	43	51	20	17
Male	42	45	19	20
Female	44	57	21	14
Urban	25	42	18	12
Rural	49	56	26	19
Richest Quintile	28	22	16	4
Poorest Quintile	58	74	38	30

*Adapted from FHI 360 Educational Policy and Data Center National Education Profiles ⁸⁴

This brief snapshot highlights shared and unique risks young people are facing in these four country contexts, and illustrates potential for differences in experiences of bullying victimization. For example, where many young people are not enrolled in school, a school-based assessment of peer violence may be misrepresenting the risk posed to a large proportion of the youth population. Below, I situate these statistics within the culture and context of each country.

2.2.1. ETHIOPIA

Ethiopia is a landlocked, mostly rural (83%) country in East Africa divided into nine regions. With a population of approximately 96 million people, it is the 14th most populous country in the world.⁸⁵ The population is young, with nearly 45% under the age of 14, and equally split between males and females. Ethiopia is an incredibly diverse country with over 80 ethnic groups;⁸⁵ while the two largest ethnic groups (Oromo and Amhara) make up approximately 60% of the population, the remaining 40% consists of a large number of smaller ethnic groups representing no more than 6% of the population each.⁸⁶ Official languages include Oromo, Amharic, Somali, and Tigrinya, depending on region.⁸⁶ The leading religions are based in Christianity (Orthodox ~44%, Protestant ~18%), with a large Muslim minority (~34%). In addition to these dominant religions, many people simultaneously adhere to indigenous belief systems.⁸⁷

Ethiopia is designated as a low-income country by the World Bank.⁸⁸ It is one of the poorest countries in Africa, with a population largely dependent on agriculture, and ranks near the bottom of the UNDP Human Development Index.⁸³ Only a quarter of households have electricity and half of homes do not have built floors, although housing is widely disparate between urban and rural areas.⁸⁵ A series of poverty reduction programs have dropped the proportion of people living in poverty from 44% in 2000 down to 30% in 2011; however, these improvements are based largely on growth in the agricultural sector, which remains vulnerable to frequent economic shocks such as droughts and environmental hazards.⁸⁹ Even so, the country is experiencing one of the largest periods of economic growth in Africa,

which has benefited the poor and brought about improvements in health and education.⁸⁹

Young people age 15-24 make up 20% of the population in Ethiopia.⁸⁵ A majority (72%) of children under age 18 live with both parents, although the proportion is higher among rural than urban children and decreases with age.⁸⁵ Although secondary education enrollment is improving,^{82,83} over 40% of youth age 15-18 are out of school, with particularly low enrollment of poor, rural youth, and minimal sex differences.⁸⁴

Ethiopia has a history of early marriage among girls, although the age is rising; currently, approximately 17% of girls and 2% of boys age 15-19 are married; boys tend to marry about seven years later than girls.⁸⁵ Twelve percent of girls age 15-19 are pregnant or parenting, and like most statistics reported, this is informed by higher rural and lower urban rates which are inversely related to educational attainment.⁸⁵ The marriage patterns in Ethiopia result in early sex more frequently taking place in the context of marriage than multiple partners.⁸⁵ Domestic violence is common, although there are laws against it. Among youth age 15-19 responding to the Demographic Health Survey, 64% of girls and 51% of boys believe the husband is justified in beating his wife in certain situations; these attitudes decline in urban centers and among those with higher education and wealth.⁸⁵

Substance use is common among Ethiopian adolescents; one study of 651 students estimated current prevalence of any substance use was 47.9%, with alcohol the most commonly used.⁹⁰ In a 2010 study of nearly 2,000 students in

eastern Ethiopia, 22% drank alcohol, with alcohol use nearly twice as common among boys than girls.⁹¹ The use of khat is also common among adolescents.⁹²

2.2.2. INDIA

The South Asian country of India is the 7th largest country in the world, and 2nd most populous, with 1.2 billion people.⁸⁶ The country is divided into 29 states, and 69% of the population lives in rural areas.⁹³ India has long been characterized by the use of a caste system of social stratification, with the four recognized castes (*Brahmins, Kshatriyas, Vaishyas, Shudras*) comprising about a third of the population, while other scheduled castes (“untouchables” or *Dalits*; 19%), scheduled tribes (indigenous groups; 8%), and “other backward classes” (40%) are all historically disadvantaged groups comprising a majority of the population.⁹³ The leading religion is Hindu (82%) with a Muslim minority (13%) and smaller numbers of Christians, Sikhs, and others.⁹³

While the Indian economy is one of the fastest growing in the world,⁹³ it is still considered a lower middle income country by the World Bank⁸⁸ and approximately 27% of the population lives below the poverty line.⁹³ Two-thirds of households now have electricity, with higher rates in urban vs. rural areas.⁹³ Over half the population works in the agricultural sector, although in recent years agricultural growth has declined and a boom in the industrial and service sectors have been driving GDP growth.⁹³

Youth age 15-24 comprise 18% of India’s population, with a sex imbalance of 1.1 males per every female.⁸⁶ While education and literacy rates have improved with the economy, a quarter of all school-aged children are not in school and there is

a marked sex difference in secondary school attendance and overall literacy rates.⁹³ Half of youth age 15-18 are out of school, with the proportion higher among girls and rural youth than boys and urban youth, and much higher among the poorest relative to the wealthiest youth (Table 2.2).⁸⁴

Over half of women are married before age 18 (driven by a 2-year earlier mean marriage age among rural women compared with urban women), whereas men marry on average six years later.⁹³ According to the Demographic Health Survey, half of the men (51%) and women (54%) interviewed believe there are times when a man is justified in beating his wife; one third of the women reported experiencing physical violence and 9% reported experiencing sexual violence.⁹³

A systematic review of mental health studies in India estimates that over 20% of school children have a mental illness.⁹⁴ Per-capita alcohol consumption in India remains low relative to other countries, but is quickly rising and has shown a 55% increase over the past 20 years with a concerning increase in problematic alcohol use among young people.⁹⁵ In the 2007 India GSHS study, 1% of youth smoked cigarettes and 4% used other tobacco products.

Andhra Pradesh. The Young Lives study is taking place within Andhra Pradesh state, a predominantly rural (72%) state located in Southern India. Data for the period covering the study is available from the 2011 HDI report, which ranked Andhra Pradesh 15th among Indian states in terms of human development.⁹⁶ Scheduled casts and tribes account for a fourth of the state's population. Whereas in 2000 Andhra Pradesh was one of the more "educationally backward and poorer" (p. 3) states, it has been categorized as high growth state for the period 2000-2008.⁹⁶ In

many ways Andhra Pradesh is outperforming the national average; for example, the state has shown improvement in income and education at a rate above the national average, has higher than average agricultural and industrial growth, and reports a more equal than average male-female population ratio. In other aspects, it remains behind; for example, it had a lower than average growth in health index over this period, and has a lower literacy rate than the national average.⁹⁶

2.2.3. PERU

The South American country of Peru is largely urban (77%), although this varies widely between the urban coastline and the mostly rural Amazon and mountain regions. The population is approximately 30 million people, with the 19% between the ages of 15-24 equally balanced between males and females.⁸⁶ A majority of the population is either Amerindian ethnicity (45%) *mestizo* or mixed Amerindian/white (37%), with a large white minority (15%) and one of the largest Asian immigrant populations in Latin America.⁸⁶ While Peru has three official languages – Spanish (84%), Quechua (13%), and Aymara (1.7%) – a large number of other native and Amazonian languages are also spoken in these areas. The country is largely Roman Catholic (81%) and Evangelical Christian (12%).⁸⁶

From 1980 to 2000, Peru experienced civil war and insurgency between Maoist guerilla groups and the Peruvian military; this conflict resulted in the displacement of hundreds of thousands, predominantly those from indigenous mountain communities. While the conflict itself has widely resolved, the detrimental impacts on Peruvian society were great; one of the subsequent

emerging social phenomena was reports of high youth gang involvement and corresponding government crackdowns on youth violence.⁹⁷

Peru is now considered an upper-middle-income country by the World Bank.⁸⁸ Although it has made large economic gains since the early 2000s and has experienced increasing economic and political stability, the country is marked by wide and apparently widening inequalities (Table 2.1).⁸³ The 30% national poverty rate exceeds 55% in rural areas, and poor children in these areas are more likely to leave school in order to work and support their families.⁸⁶ Children and young people are particularly impacted by poverty in Peru, where child poverty is 15% higher than overall poverty.⁹⁸

While approximately 20% of youth age 15-18 are out of school in Peru, the proportion is much higher among poor and rural youth (Table 2.2).⁸⁴ Among youth living in households of extreme poverty, only half are enrolled in secondary school; among students whose maternal language is Amazonian, the number is slightly lower.⁹⁸ Half of adolescents report working when school is in session (50%). Just under 60% of youth age 17-19 finish secondary school, with a much lower completion rate among minority groups.⁹⁸ Thirteen percent of girls age 15-20 are mothers.⁹⁸ All of these statistics are markedly higher among poor, rural, and indigenous youth.

A GSHS study was conducted in Peru in 2010 showing that by age 15, 66% of youth have tried alcohol and 13.5% have been drunk, 3.8% have used marijuana, 19.5% have seriously considered suicide and 17% have actually attempted suicide within the

past year, nearly 17% have had sex, and 5.5% of youth report having no close friends.⁹⁹ Of those who ever drink in Peru, nearly all initiate alcohol use before the age of 16.¹⁰⁰

2.2.4. VIETNAM

Vietnam is a socialist republic in Southeast Asia divided into 61 provinces. It remains a largely rural (31% urban) country. The population of 93 million is predominantly Kinh ethnicity (85%) with a number of small minority groups contributing less than 2% each. A quarter of the population is under age 14, and equally split between males and females.⁸⁶ The official language is Vietnamese, spoken by a majority of people. Where minorities are concentrated in mountain areas, other languages are spoken. A large majority of Vietnamese (~80%) do not identify with any religion on the national census, with a smaller number identify as practicing Buddhists (9%) or Catholics (6%).⁸⁶ However, other reports cite that about 80% of the population adheres to some extent to the “three teachings” of Confucianism, Taoism, and Buddhism that has greatly informed the social norms, family values, and system of education in the country.⁸⁷ A majority of Vietnamese also report participating in ancestor worship.⁸⁷

Following the end of the Vietnam War in 1975, the centrally planned cooperative farming initiatives under the Vietnamese economy resulted in a massive economic crisis and famine. Beginning in the mid-1980s, the country undertook economic reforms to develop a market based economy and allow private sector growth, leading to greater international engagement beginning in the 1990s.⁸⁶ The World Bank calls Vietnam a “development success story”,¹⁰¹ citing its rapid emergence as a lower middle income country and reduction of the proportion

of people living under the poverty level from 60% to under 10%. While still largely agricultural, Vietnam has developed an important economy of manufacturing exports.¹⁰¹ According to the most recent (2002) Vietnam Demographic Health Survey, approximately 90% of households have electricity, 70% have a finished floor, and over half have fewer than two people per sleeping room in the home—these figures themselves are quite dated and likely underestimate the current level of wealth.¹⁰²

Young people age 15-24 make up about 18% of the Vietnamese population.⁸⁶ School attendance is high in Vietnam; according to the FHI 360 Educational Policy and Data Center,⁸⁴ only 6% of young people did not complete primary school, while 17% of youth age 15-18 are not enrolled in school. As in other countries, wealthier and urban youth have higher educational attainment than their poorer and rural counterparts. School attendance is lower among ethnic minorities, with a disproportionate impact on girls.¹⁰³ Youth who aren't in school report this is due to inability to afford school fees and having to work for the family, and roughly half of all young people surveyed reported having worked for pay at some point.¹⁰³

Vietnamese youth report high and rising prevalence of poor mental health, and in some cases these risks have been associated with school-related pressures and exposure to violence. A GSHS study was conducted among youth age 13-17 in Vietnam in 2013, reporting that nearly 21% of girls and 13% of boys report having seriously considered suicide over the past year, 21% of youth have been drunk (the proportion was nearly twice as high in boys compared to girls), almost 6% of youth reported having had sex, and 5% reported having no close friends.¹⁰⁴ Boys in

Vietnam reported peer pressure to drink and smoke, while these actions are less socially acceptable for girls.¹⁰³ Youth in Vietnam are also at high risk of accidents, injury, and physical harm, particularly due to motor vehicle risk when driving without a helmet and driving under the influence of alcohol.¹⁰³

2.3. BULLYING VICTIMIZATION IN THE STUDY CONTEXTS

2.3.1. ETHIOPIA

Very little bullying research has been conducted in Ethiopia, and no GSHS report has been published. A 2008 desk review conducted by Plan Ethiopia was unable to identify any systematic data on bullying in the country.¹⁰⁵ Among 379 high school youth from four high schools in Addis Ababa, Abera¹⁰⁶ reported that 17% self-identified as bullied using a behavior checklist, with name calling and being made fun of the most common behaviors reported. Additionally, of the total sample of 379 youth, 25% reported feeling bad or sad and nearly 10% reported feeling sick due to being bullied.¹⁰⁶

Outside of research specifically focused on bullying, other aggression toward young people has also been documented. Save the Children published a 2008 report on violence against girls in schools that described harassment, physical attacks, theft, and verbal assaults, all often perpetrated by older boys walking to and from school.¹⁰⁷ The study was not restricted to peer violence; the girls also reported experiencing aggression by teachers and parents. The authors discussed anecdotal observations of absenteeism and emotional suffering associated with the multiple types of violence experienced.¹⁰⁷ Other research has also documented high rates of

sexual violence or coercion among female students in Ethiopia, with estimates ranging from 32-68% in selected studies.¹⁰⁸⁻¹¹⁰

2.3.2. INDIA

While the 2007 India GSHS study did not assess bullying, 10% of students reported having no close friends, 8% reported feeling lonely most of the time during the past year, and 41% reported that most students in their school were never or rarely kind and helpful during the past month.¹¹¹ Other studies have provided estimates of bullying victimization prevalence ranging from 31-60%, although these studies have been limited to students drawn from a few schools so may not be widely representative.¹¹²⁻¹¹⁵ Even so, findings have suggested prevalence is higher in urban areas and potentially higher among boys than girls.¹¹²⁻¹¹⁵ Generally, studies have also linked victimization with lower self-concept, higher risk of emotional problems, physical complaints, sleep problems, and fear of going to school,^{112,113,115} although one finding reported no association between victimization and self-efficacy.¹¹⁶

Research assessing individual bullying behaviors in India has identified verbal attacks as the most common forms of victimization.^{113,115,117} A qualitative study using photo stories among 33 adolescents in the Punjab also noted a high proportion of the stories focused on physical victimization, and commented that while only a few of the stories met the traditional definition of bullying as a repeated phenomenon with power imbalance, the children themselves perceived these events as such.¹¹⁷

Outside of victimization research, multiple studies focused on aggression among youth have noted high rates of physical aggression. For example, two similar studies of aggression among approximately 300 high school students each both reported prevalence of past-month aggression between 65-70%.^{118,119} Among 258 rural adolescents age 15-19, total aggression was assessed to be higher among older adolescents, but physical aggression was significantly higher among those age 15-17, highlighting the concentrated risk of physical victimization during this period.¹²⁰ A large-scale study of 5476 young people age 15-26 found that a third of the entire sample reported fighting when angry; this study also reported higher aggression among the adolescents.¹²¹

2.3.3. PERU

Two large-scale, nationally representative studies in Peru have included an assessment of bullying. The 2010 GSHS study estimated that 46% of boys and 48% of girls age 13-15 have been recently bullied.⁹⁹ A regional study across 16 countries in Latin America provided a similar estimate, with 44.5% of Peruvian 6th graders reporting being robbed, insulted or threatened, or physically bullied within the past month.¹²² Outside of these national estimates, very little research on bullying had been done until recently. In 2013, an attempted systematic review on bullying in Peru identified four Spanish-language articles on the topic, all of which relied on convenience samples.¹²³ The authors summarized findings that victimized urban youth were likely to be isolated with low self-confidence, in the highlands having a physical defect increased risk for social exclusion or discrimination, and in rural areas victims would be “picked on” and would be quiet, fearful, and small. They

contrasted these reports with those in Spain, concluding that bullying is a complex social phenomenon with profiles shaped by environment, and caution that prevention programs must be context-specific.

More recently, a series of findings among the Young Lives Peruvian cohort included in the current study has shown victimization to be associated with poorer parent-assessed child health as well as adolescent risk behaviors and emotional difficulties^{46,124,125}. These studies also demonstrated that when considered independently, only some experiences of victimization were associated with risky behaviors and mental distress; for example, property theft or damage was not associated with smoking, drinking, or sexual activity.^{46,124,125} Qualitative data has suggested higher victimization prevalence among urban youth;¹²⁶ this would also be supported by a body of literature on violence highlighting the role of rapid urbanization in Latin America.¹²⁷

2.3.4. VIETNAM

The 2013 GSHS study in Vietnam reported recent bullying victimization among 26% of both boys and girls.¹⁰⁴ Outside the GSHS only a few studies have included bullying, sometimes assessing victimization as a risk factor rather than the primary variable of interest. For example, a study exploring risk for suicide among 972 students in two schools in Hanoi, Vietnam, found that bullying victimization increased risk for boys, but not for girls.¹²⁸ A Young Lives policy paper reported nearly 20% of 8-year olds said they were bullied by peers, with slightly more girls bullied than boys (21.4 vs. 18.1%). This report also suggested that overall, urban youth may be at higher risk of victimization, although the authors note that poorer

children were not at higher risk, perhaps because they are working and have less leisure time to spend with peers.¹²⁹

As is the case elsewhere, most research has not examined specific bullying behaviors in Vietnam. An exception is Paul Horton's in-depth ethnographic research on bullying in two schools in Hanoi.¹³⁰ In this study, Vietnamese youth describe bullying as the use of various tactics to coerce the victim into doing something he/she would otherwise not do; aggressors will first "ask" the victim to do these activities, and will resort to more direct forms of aggression if the victimized youth refuses their requests. This study also discusses negative emotional outcomes related to victimization.¹³⁰

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CHAPTER 3: METHODS

3.1. DATA SOURCE

3.1.1. OVERVIEW OF THE YOUNG LIVES STUDY

The Young Lives (YL)² study is an ongoing fifteen year longitudinal study of child poverty in Ethiopia, India, Peru, and Vietnam that began in 2002. The study is following approximately 1,000 children per country who were recruited at age 8 and will be followed through age 21. (The YL study is also following a younger cohort of approximately 2000 children per country recruited at age 1 and followed through mid-adolescence; that cohort is not described here because it is not included in the current study). YL is funded by the UK Department for International Development (DFID). It was co-funded by The Netherlands Ministry of Foreign Affairs from 2010-2014, and by Irish Aid from 2014-2015. Data from the first three study rounds has been made publicly available through the UK Data Archive.³

Baseline recruitment for the YL study followed a sentinel site sampling approach. In 2002, twenty sentinel sites were purposively chosen by the research teams in each country to reflect the diverse ethnic, religious, geographic, and political contexts of the countries, with oversampling of high

Table 3.1. Cohort demographics at Round 1.

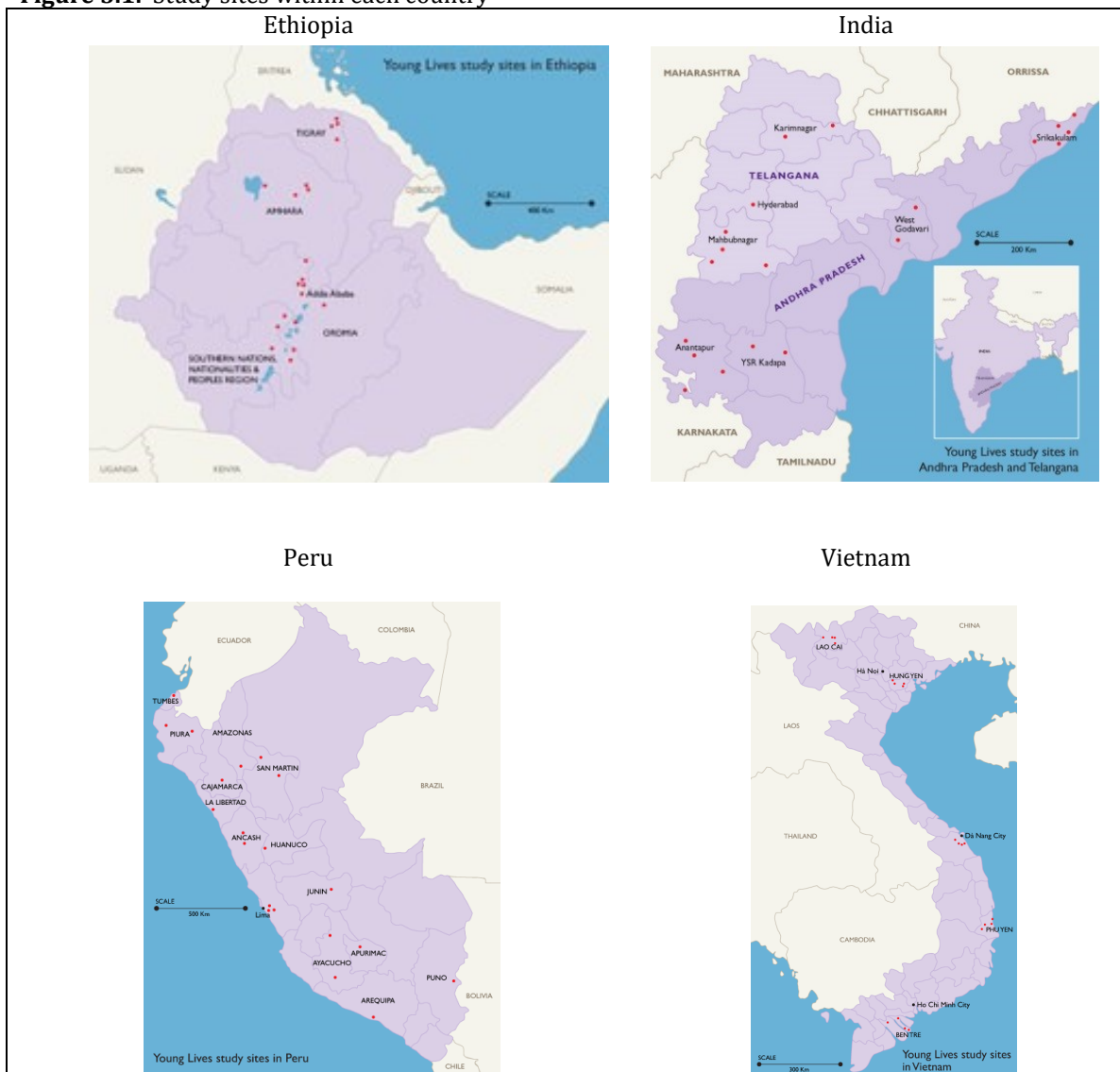
	Ethiopia	India	Peru	Vietnam
<i>n=</i>	1000	1008	714	1000
Age	7.9 (0.3)	7.9 (0.3)	7.9 (0.3)	7.9 (0.3)
% Male	51.1	49.9	54.1	50.2
% Urban	40.1	24.9	74.1	20
% Poor	90	62.6	35.4	37.2

^aAdapted from the YL cohort profile ¹

poverty areas.⁴ Sentinel sites are shown in Figure 5; in Ethiopia, Peru, and Vietnam, these sites spanned the entire country, whereas the Indian sites were confined to the state of Andhra Pradesh (in 2014, Andhra Pradesh was divided into two states, Andhra Pradesh and Telangana, so the sample now includes youth from both areas). Within each sentinel site,

households with an appropriately aged child (range: 7.5-8.5 years old) were identified and approximately 50 children were randomly selected for recruitment. Refusal rates were below 2% in all countries and replacement sampling was used.⁴ Baseline demographics of the four country cohorts are reported in Table 3.1.¹ The children were followed-up at ages 12, 15, and 18, and will be followed up a final time at age 21. Sample attrition was less than 5% over the first three rounds.¹

Figure 3.1. Study sites within each country



Images reprinted from the Young Lives website: www.younglives.org.uk.

The YL sampling approach was not intended to be nationally representative, but reviews of the sampling strategies have been conducted to compare the YL samples to nationally representative statistics. In Vietnam, YL households were slightly poorer and have fewer assets, and were more likely to have primary caregivers with lower education, than the average Vietnamese household.⁵ In Ethiopia, the YL sample was slightly wealthier with better access to basic services, but with fewer assets than the average Ethiopian household.⁶ The Indian sample was also slightly wealthier than the average household in Andhra Pradesh, but with lower caregiver education and home ownership.⁷ In Peru, YL households also were slightly better off than the national average, with more assets and access to public services and education.⁸ However, in all four countries the sampling strategies resulted in a sample of children that reflected the range of childhood experiences in the country, or in the case of India, the range of experiences of children in Andhra Pradesh and Telangana states.

3.1.2. SAMPLE FOR THE CURRENT STUDY

The current study uses cross-sectional data from Round 3 of the YL older cohort, when the children were 15 years old. At this time point, the youth completed a self-administered questionnaire (to minimize reporting bias) on sensitive youth issues including parental relationships, exposure to violence, mental health, and risk taking behaviors. Most of the exposure and outcome variables included in the current study were included in this self-administered questionnaire. These variables are discussed below, and can be viewed in Appendix A. The total sample size of the YL cohorts at Round 3 were: Ethiopia, $n = 971$; India, $n = 976$, Peru, $n = 678$, and Vietnam, $n = 976$. Because the primary research question centered on bullying victimization, we excluded 65 youth (<2%) who were included in Round 3 but for whom all bullying victimization data was missing, resulting in total sample sizes for analysis of 971, 967, 638 and 960, respectively. Of the 65 excluded youth, 41 were

missing the entire self-administered questionnaire, so the lack of responses to the victimization data were more likely a logistical issue than youth intentionally skipping those questions.

3.2. CROSS-CULTURAL RESEARCH APPROACH

Berry conceptualizes cross-cultural research as having three goals: 1) to test the validity of current approaches in other cultures; 2) to discover new, culturally distinct aspects of a phenomenon; and 3) to integrate the lessons from these approaches to develop a broader, widely applicable psychology.⁹ To this end, two research perspectives are relevant: an *etic* approach, in which behavior is studied with a focus on universal underlying phenomena across multiple studies and sites, and an *emic* approach, in which behavior is studied within a particular context and focuses on locally developed knowledge, categorization, and interpretation.⁹ Drawing heavily from the original conceptualization by Pike,¹⁰ Berry explains how these two approaches contribute to goals 1 and 2, respectively, and are symbiotic and necessary to reach the ultimate 3rd goal.⁹ He summarizes the strengths of the *etic* approach as 1) providing a breadth of perspective that allows similarities and differences to be recognized, 2) informing measurement techniques, and 3) serving as a point of entry.

The third strength above is particularly relevant to the present research: that a tentative or partial description of a phenomenon is necessary to begin to explore similarities and differences and serve as a jumping off point for more in-depth cultural exploration.^{9,10} Most cross-cultural research on bullying conducted to date has used a single question, *definition-based*^{11,12} assessment of bullying victimization. In this approach youth are provided a description of what bullying is (e.g.: "Bullying occurs when a student or group of students say or do bad and unpleasant things to another student. It is also bullying

when a student is teased a lot in an unpleasant way or when a student is left out of things on purpose. It is not bullying when two students of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.”¹³) and are asked a single question regarding how frequently they have been bullied over the past 30 days.¹³ While this takes an etic approach in assuming a universal phenomenon, the limited detail precludes making much progress toward Berry’s first goal above. What this approach has illustrated so far is that bullying does appear to occur in all corners of the globe, but that there is a wide range in prevalence rates when assessed this way that we have difficulty understanding. Studying a construct such as bullying cross-culturally is complicated not only by potential cultural variations in what behaviors are viewed as aggressive or negative acts, but also because the behaviors subsumed under the terms used to describe these problematic relationships may differ across countries, cultures, and languages.¹⁴ Using a single-question approach, respondents may be cued by their understanding of the term used regardless of whether a standard description is provided, resulting in comparisons of potentially different sets of behaviors across countries contributing to the wide range in prevalence that we see.¹⁵

For much of the cross-cultural literature on bullying—and nearly all of the bullying literature in LMIC—it is unclear what actual behaviors are being experienced. Given this dearth of information, the overall goal of the current study was to use a *behavior-based* assessment often preferred by researchers^{11,12,16} to explore experiences of a standard set of behaviors using comparable analyses in each country. We take an etic approach, using a rough description of the phenomenon of bullying victimization by measuring nine behaviors commonly conceptualized as the visible component of what is in fact a relationship dynamic.¹⁷ The assumption made is that the underlying construct of bullying is universal to the extent that these problematic peer relations occur around the world and would result in increased experiences of the nine behaviors we were able to record. We

further assume that these behaviors represent, to some extent, the range of various forms of behavior that bullying victimization could manifest as. For example, while we do not assume that the only ways a youth could be physically victimized is through punching, we do assume that youth engaged in a problematic peer relationship that includes elements of physical aggression are more likely to be punched. Such assumptions can be tested to some extent by examining internal consistency and factor structure across countries. This will be described further below.

By striving to conduct the same set of analyses across different countries, we have excluded from analysis many factors, such as ethnicity, that may be relevant within a context but not comparable across contexts. Instead, we are focusing on patterns of behavior and the most basic demographic predictors of these patterns. What this study lacks is the complementary emic approach – an in-depth exploration of all the ways a youth could be victimized in a particular context that includes culturally unique forms of victimization, understanding the broader relationship dynamics that contribute to these patterns of victimizing behavior, or a discussion of how these relationships and experiences are perceived by youth. What it offers instead is that jumping off point: similarities and differences identified here will serve as a useful foundation on which to base future, emic research, to add meaning and interpretation to these findings. Taken together, these will move toward goal 3 above to develop a unified perspective on bullying victimization.

3.3. MEASUREMENT ISSUES

3.3.1. BULLYING OR PEER VICTIMIZATION?

The typical definition of bullying has three key elements: 1) intentional acts of aggression; 2) repetition; and 3) a power imbalance in which the victim is unable to defend him/herself.¹⁷ Bullying is then considered a subset of a broader construct of peer

victimization that does not necessarily include repetition or power imbalance. The extent to which each of these features is critical to consider when examining victimization has been a source of debate in the literature. For example, Olweus has discussed the importance of the power imbalance and cautioned against conflating terms unless one has empirical support to do so.¹⁸ There has also been increasing attention to distinguishing between pure victims and bully/victims (children who fall into both roles), suggesting that even within a victim class the power differential could be helpful in determining developmental trajectories.¹⁹ On the other hand, Finkelhor and colleagues argue that focus should be on peer victimization rather than bullying due to critical limitations with the bullying construct.²⁰ In their criticisms they highlight that: 1) the term excludes serious yet perhaps not repetitive acts that would certainly be targeted behaviors in any bullying prevention program; 2) the technical definition does not equate to common usage and interpretation; 3) power imbalance is difficult to define and even aggressive acts in which a child was able to defend him/herself should still be prevented; 4) distinctions between forms of aggression should have empirical support; and 5) bullying biases research and practice almost exclusively to the school environment at the expense of other contexts in which peer relationships occur.²⁰

Using a data from a large-scale US study, Ybarra and colleagues proposed a middle ground: they found that while only a subset of youth who self-identified as bullied met the traditional definition, and victims of any sort experienced psychosocial impairment, the level of impairment did increase with both repetition and power differential.²¹ Olweus himself has also offered that the concept of power imbalance may be introduced indirectly by the wording used in questions; for example, questions assessing getting “beat up” or “made fun of” tends to imply difficulty defending oneself.¹⁸ Furthermore, even *definition-based* questionnaires that explicitly include power imbalance in the definition have been

shown to measure power imbalance less accurately than other bullying aspects.¹⁶ These studies demonstrate the challenge of clearly and accurately measuring the subtleties of bullying victimization.

As the Social and Health Assessment Peer Victimization Scale (SAHA-PVS)^{22,23} used in the current study did not explicitly assess power imbalance, this study finds itself well in the midst of the above debate. The behaviors assessed in this scale are listed in Table 3.2.

The scale was adapted from a longer instrument that has been included in a compendium of bullying measurement tools produced by the US Centers for Disease Control.²⁴ When used in international research elsewhere, the scale has been described as a measure of bullying victimization with the caveat that failure to include a measure of power imbalance has likely contributed to error in measurement.²⁵⁻³⁰ The questions lend themselves to the interpretation of imbalance conceded by Olweus, as does the introduction, *“Other young people can be great. But they can also be really nasty...”*

We do emphasize repetition throughout the three aims. In aim 1, repetition is explicitly built into the exploratory analysis and models by categorizing bullying as having occurred if a single behavior was experienced more than one time or two or more behaviors were experienced at least one time each. In aims 2 and 3 the items are treated as “none” vs “any” exposure, but multiple experiences are expected in

Table 3.2. SAHA Peer Victimization Scale

During the last 12 months, we want to know whether other young people...

1. called you names or swore at you
2. tried to get you into trouble with your friends
3. took something without permission or stole things from you
4. made fun of you for some reason
5. made you uncomfortable by staring at you for a long time
6. punched, kicked or beat you up
7. hurt you physically in some other way
8. tried to break or damaged something of yours
9. refused to talk to you or made other people not talk to you

classes with higher probability of experiencing each item; additionally, these classes were shown to correlate with caregiver report of youth bullying victimization. Yet we also explicitly assess whether these acts are confined to a school environment, and, finding that they are not, step away from the bullying construct per Finkelhor's fifth point above by including youth both in and out of school.

Acknowledging these efforts and the above debate, we would contend that although we have not been able to clearly assess the relationship dynamics in which the victimization occurred, the measure has captured events likely perceived as harmful by the adolescent and serves as an imperfect assessment of bullying victimization consistent with standard practices in the field of bullying research. It is likely, however, that measurement error may be greater in contexts with higher levels of underlying crime and violence, where exposure to victimization outside a power imbalance would be more likely.

3.3.2. CREATING MEANINGFUL EXPOSURE CATEGORIES

Using a standardized scale of behaviors to assess victimization is an improvement to the existing single-question approach by providing information about variations in individual behavior prevalence, and how these contribute to overall country prevalence estimates. Using a scale presents its own difficulties, however, when determining how to use the information presented to classify respondents into meaningful groups. Nylund and colleagues have summarized the most commonly used approaches, as well as their drawbacks.³¹ For example, cut-off scores are often used to create categories of severity, but groups created by pre-determined cut-off scores may result in misclassification or fail to distinguish meaningfully different victimization experiences. Within broad groups created by blunt cut-off points, variation in experience may be lost. If using a distributional cut-off score, such as a standard deviation from the mean, classification of an individual may also be impacted by the amount of variation in the group they are a part of. On the other hand,

groups may be categorized by the researcher according to experiences of a particular victimization subtype (e.g.: verbal or physical). This can be informative for examining associations with particular forms of victimization; for example, researchers often highlight sex differences in experiences of direct and indirect victimization. But this approach generally doesn't account for the high correlations between these experiences, thereby examining a behavior in isolation that typically occurs within a pattern of behaviors.

In response to the above issues surrounding common *variable-centered* approaches, developmental researchers are increasingly turning to *person-centered* approaches such as latent class analysis (LCA) to identify meaningful heterogeneity within populations.³²⁻³⁴ LCA is a latent structure model similar to factor analysis, but used with categorical rather than continuous variables. Based on the assumption that an underlying latent variable accounts for an individual's pattern of responses to a set of observed, discrete variables, LCA uses response patterns to classify individuals into subgroups.³⁴ This allows for the use of LCA to examine typologies—in this case, groups of youth with similar *patterns* of victimization experiences that are explained by latent class membership.³⁵ Researchers using LCA to study bullying victimization have highlighted its flexibility in allowing class membership to be determined by a combination of severity and form characteristics, therefore accounting for overlapping experiences.^{31,36} Identified severity patterns have been shown to be better at predicting subsequent depressive symptoms than raw scores,³¹ while patterns characterized by differences in forms of behaviors have been shown to predict different types of maladjusted behavior.³⁶

This line of research, while relatively novel, demonstrates the heterogeneity in bullying victimization and illustrates the utility of person-centered approaches to improve identification and inform interventions. By identifying unique patterns, this is a novel and exciting approach to cross-cultural exploration. While we have drawn on both variable-

centered and person-centered approaches in the current research, developments in the study of typologies were key to formulating our research approach and the latter approach serves as the foundation of this body of research.

3.3.3. COMPARABILITY OF MEASURES

A key consideration in cross-cultural research of latent variables is the extent to which standardized scales perform similarly (i.e. measure the same construct) across contexts, a concept known as *measurement invariance*. The level of measurement invariance directly impacts ability to make cross-cultural comparisons and test for cross-cultural differences. Kankaras and Moors have provided an overview of the role of measurement invariance in cross-cultural research, including three possible levels of invariance and the inferences that can be made at each level.³⁷ *Configural* invariance is met when a group of observed indicators has the same pattern of relationships to a latent construct across settings. In *metric* invariance, these relationships are equal across settings; in other words, they have the same factor loadings and can be assumed to be measuring the same underlying construct, but scores in one setting may be systematically biased upward or downward compared to another setting. Lastly, *scalar* or strong invariance is the most stringent form in which the entire factor structure, including loadings and intercepts, are equal across groups. Only when scalar invariance is met can group *means* be directly compared. In practice, full metric or scalar invariance is often not met, yet meaningful comparisons can be made if substantial partial measurement invariance is observed.³⁷

Prior to undertaking the current research, we examined the level of measurement invariance of the two scales included in our analyses. These included the *Social and Health Assessment Peer Victimization Scale* (SAHA-PVS)^{22,23} and the Emotional Difficulties subscale of the *Strengths and difficulties Questionnaire* (SDQ).³⁸ To assess measurement invariance we used multi-group alignment optimization,³⁹ an approach that has been shown to agree

with models estimated using a traditional confirmatory factor analytic approach.³⁹ A summary of these analyses is provided in Appendix B. In general, we found support for the use of the two scales in the analysis. Retaining the original response options for the SAHA-PVS produced almost full metric invariance (we found only two instances of non-invariance), while treating the responses as dichotomous produced full metric invariance. Full metric invariance was also met for the SDQ. This means that to a large extent the items in these scales measured the same construct across settings, providing support for the assumptions described above that there exists some element of universality in the construct of bullying. However, group mean scores on these items are not directly comparable.

Subjective, single-question items face similar difficulties about cross-cultural comparisons, but cannot be tested in the same way as a scale. Such variables included in the present research include caregiver reports of youth victimization, self-reported health, and subjective wellbeing. Alcohol use, while an objectively measurable indicator, is also subject to potential social acceptability biases that may differ by country. Bias would be observed if individuals from different countries who shared similar values on the underlying trait provided different responses to the question. For example, cultural practices and values could impact both actual appraisal of health and wellbeing as well as cultural response patterns such as the role of social desirability or inclination toward more moderate or extreme responses.⁴⁰ To situate our analyses in the broader body of literature, we used questions that are frequently used in cross-cultural research and have substantial construct validity as demonstrated by consistent associations with other variables in their nomological networks,⁴¹ but it would be inappropriate to draw direct comparisons of these scores.

The difficulties in drawing direct comparisons among the country samples supports our decision to conduct all analyses separately by country. The purpose of this dissertation

was not to provide cross-country comparisons on mean outcome scores but to assess how these variables related to one another within a context. In other words, rather than comparing average self-rated health scores *across* countries, we were interested in understanding whether bullying victimization was consistently associated with lower self-rated health *within* countries. Where we do draw tentative comparisons across settings, these are based on general observations rather than statistical evaluation of differences.

3.4. METHODS SYNTHESIS

With the considerations described above, the three aims included in this study draw on a variety of approaches to explore bullying victimization in the four countries. Aim 1 examines prevalence of specific forms of victimization across the countries and explores demographic correlates of victimization and victimization subtypes by country. This analysis follows a variable-centered approach similar to that taken in most existing research, which is useful for expanding the knowledge base to include these settings while situating findings within a larger body of literature. In general, Aim 1 seeks to answer the questions raised by the wide prevalence estimates in existing research by examining, across individuals, what bullying victimization “looks like” in a given country. Aim 1 does not fully account for the high correlation of victimizing experiences; these correlations are addressed in Aim 2, where we transition to a person-centered (LCA) approach to explore how the country-level experiences identified in Aim 1 actually manifest within individuals. The question in Aim 2 is whether we see similar patterns of experience across settings. Aim 3 extends the models developed in Aim 2 to examine cross-sectional associations between latent classes and a number of psychosocial adjustment indicators. The question this aim seeks to answer is whether particular patterns of victimization are associated with greater impairment than others, as measured by psychosocial adjustment indicators.

All of the analyses were conducted separately by country, precluding direct comparison but providing an overall picture of similarities and differences in experiences across the four settings. Two analytic approaches were common across all analyses. First, robust standard errors were used throughout to account for the minimal design effects we observed due to the clustered sampling strategy. Second, as there was very little missing data we applied strategies to retain all available information on bullying victimization (prorating scale scores, and use of Full Information Maximum Likelihood for LCA model estimation) but used listwise deletion for analyses with covariates. The methods for each aim are described further below.

3.4.1. AIM 1: EXPLORATORY ANALYSIS AND HURDLE REGRESSION

Aim: To examine the total and per-item prevalence of bullying victimization among 15-year old youth in each study sample, and identify correlates of victimization by country.

Defining victimization. In Aim 1, the peer victimization scale (SAHA-PVS) was used in two ways. First, to emphasize the element of repetition and maintain consistency with prior research, we defined victimization at the *individual behavior* level as reporting *two or more* experiences of that behavior in the past year.^{26,27,42,43} Second, to assess demographic correlations with victimization, we retained the original response options (1 “never” 2 “once” 3 “2-3 times” 4 “4 or more times”) and calculated total SAHA-PVS scores (range: 9-36) and subscale scores (range: 2-8) for physical, verbal, relational, and property victimization.

Statistical modeling. As a majority of youth in each sample reported no victimization experiences, total score distributions demonstrated high lower bound inflation and right skew, rendering typical linear regression approaches invalid. To avoid the challenges posed by the use of arbitrary cut-off scores that would be required for logistic regression, we used

Cragg hurdle regression⁴⁴ to estimate associations between the selected demographic correlates and SAHA-PVS scores. Hurdle models are two-step regression models suitable to handle the observed distributional characteristics by specifying a probit model predicting clearance of a “hurdle” (e.g.: the lower bound) and a truncated linear model predicting positive scores conditioned on passing the hurdle. Thus, we were able to model both predictors of exposure (we defined as experiencing two or more victimizing behaviors) and severity of victimization among those exposed. We combined these models using post-estimation methods to evaluate the difference in mean scale scores by level of a covariate.

3.4.2. AIM 2: LATENT CLASS ANALYSIS AND LATENT CLASS REGRESSION

Aim: Empirically identify groups of youth with different victimization patterns at age 15 by country and explore child sex and community context as predictors of group membership.

Defining victimization. For Aim 2, the SAHA-PVS original response options were recoded as “none” vs. “any” to facilitate exploration of how behaviors may be experienced within a pattern. The nine behaviors were treated as individual indicators in the LCA models.

Statistical modeling. Latent class analysis (LCA) was conducted using Mplus 7.1.⁴⁵ As described previously, LCA is based on the assumption that an underlying latent variable accounts for an individual’s pattern of responses to a set of observed, discrete variables (i.e. the nine binary behavior items), making it a useful approach to classify subgroups of individuals with similar response patterns.³⁴ LCA model selection requires evaluating comparative fit of multiple models differing in the number of classes prior to including covariates.⁴⁶ Decisions involve researcher judgement, consideration of prior findings,^{31,36} model fit indices including Akaike’s Information Criterion (AIC)⁴⁷, Bayesian Information Criterion (BIC)⁴⁸, sample-size adjusted BIC (SSA BIC)⁴⁹, and the Lo-Mendell-Rubin adjusted

likelihood ratio test (LMR)⁵⁰. The model with the lowest AIC, BIC, and SSA BIC is preferred. The LMR compares the estimated model against a model with $k-1$ classes, with a low p -value rejecting the $k-1$ class model in favor of the larger model.⁵¹ We prioritized the BIC as it has been shown to perform consistently well across different conditions in simulation studies.⁵¹ Models were further evaluated for goodness of fit using entropy values. Entropy values ranging from 0-1 quantify the level of classification uncertainty, with higher values representing better discrimination of class membership for individuals.⁵²

The key assumption in LCA is that the latent class is what accounts for patterns of responses. Practically, this means that conditioning on class membership, indicators should be independent from one another. This assumption of conditional independence can be evaluated using distributions of bivariate residuals. Bivariate residuals are compared in 2x2 tables following a hypothetical, yet unobserved, chi-square distribution. Asparouhov and Muthen point out that because the distribution is unobserved and this analysis consists of many comparisons, chi-square statistics are provided as a guide rather than a statistical test and there is an assumption that some associations will appear to be significant by chance.⁵³ They suggest focusing on only the few highest bivariate residuals, considering an overall chi-square under 15 to indicate satisfactory model fit and statistics over 30 an indication of extreme misfit.⁵³ This was the approach we followed.

When including covariates in an LCA model, either a 1-step or 3-step approach may be used. Vermunt⁵⁴ and others⁵⁵ have discussed the challenges posed by each of these approaches. In the 1-step approach, covariates are added directly to the model such that they themselves influence the latent class structure. The strength of this approach is in retaining the classes as latent; however, including covariates can be impractical, require re-evaluation of the model with the inclusion of each covariate, and can reduce overall interpretability of the model. The 3-step approach, on the other hand, requires using

posterior probabilities to assign individuals to classes, thereby treating the latent class as an observed variable. These assigned classes can then be regressed onto covariates. But because of the classification uncertainty described above, treating these latent classes as observed introduces measurement error into the model and can produce biased estimates. Improving approaches to correct or minimize the error associated with 3-step methods is a developing area of research.^{54–56}

Considering the pros and cons of each approach, we chose to use the 1-step multinomial regression approach to include covariates in the LCA model while retaining the latent variable structure. In LCA modeling with covariates, the covariate may be associated with a latent class but, conditioning on class, should not be directly associated with indicators. In a 1-step approach, possible presence of direct effects between the covariate and an indicator are indicated by substantial shifting of class probabilities with addition of a covariate.⁴⁶ When class shifting was observed, we fixed all direct effects to zero and examined modification indices for evidence of a direct effect; if evident, this was statistically tested by regressing the indicator on the covariate and evaluating the statistical significance of the association at $p < .05$.⁵⁷ Introducing direct effects in these already complex models provides additional difficulty in interpretation. We found minimal evidence of direct effects and sensitivity analyses demonstrated any potential effects had no impact on inferences; therefore, we followed the rule of parsimony as illustrated in George Box's famous quote, "All models are wrong, but some are useful." (p. 424).⁵⁸

Given the substantial amount of researcher judgement in class enumeration, it is important to provide some level of construct validation for latent classes. We began this class validation process in aim 2 by comparing class membership to caregiver report of whether their child had ever been bullied. While we would expect a level of disagreement and lower identification of victimization by caregivers than the youth themselves,^{59,60}

validity would be supported if trends suggested caregivers were more likely to recognize victimization in more severe cases and those with direct (i.e. more visible) aggression.^{61,62} To prevent caregiver report from impacting the latent class structure we included caregiver report in the model using a 3-step approach. The method used is the same as that described below in aim 3.

3.4.3. AIM 3: LATENT CLASS ANALYSIS WITH DISTAL OUTCOMES

Aim: Assess the cross-sectional association between patterns of bullying victimization (at age 15) and psychosocial adjustment in adolescence.

Defining victimization. For Aim 3, we expanded the LCA models developed in aim 2, treating the latent classes of bullying victimization as the exposure variable for the psychosocial adjustment outcomes of interest.

Statistical modeling. To prevent the psychosocial adjustment outcome variables from influencing the latent class structure, we used a 3-step approach developed by Bolck, Croon, and Hagenaars known as the BCH method⁶³ to include the psychosocial outcomes in the latent class models. The BCH method is a fully automated 3-step approach in which posterior probabilities are used to assign individuals to their most likely class, but the classes are then treated as multiple groups that are weighted according to the level of measurement error. This approach allows for means of auxiliary variables to be compared across classes while accounting for measurement error. Means are compared using chi-square tests of statistical significance. This 3-step BCH approach has been shown to outperform similar 3-step approaches, particularly when unequal variance of the auxiliary variable is assumed.⁶³

3.5. RESEARCH ETHICS

This dissertation research was a secondary data analysis of publicly archived, de-identified data. The proposal was reviewed and designated as not human subjects research by the Institutional Review Board (IRB) at Johns Hopkins Bloomberg School of Public Health. When using secondary data, the research must rely on the primary data collectors to ensure data was collected in an ethical and responsible manner. The Young Lives study team has been very conscientious about the ethics of studying children living in poverty in low-resource settings, and has published multiple papers and a methods guide outlining their approach.^{64–67} The protocol received approval by IRBs at both the London School of Hygiene and Oxford University as well as in the four study countries, and was been reviewed against the ethical standards of the partner institutions in each country. Updated approval is obtained for all changes made to data collection forms at each round. YL systematically documents ethical approaches and considerations as part of standard research documentation, and has developed a Memorandum of Understanding (MoU) for field workers on how to respectfully interview children and how to report concerns of child abuse. Ethics difficulties encountered by fieldworkers are reported and reviewed by the study team. Children and their caregivers provide informed consent. Compensation for study participation includes either a small payment or gift for their time, depending on the country. The team works with local researchers and field workers as much as possible.

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CHAPTER 4: PREVALENCE OF BULLYING BEHAVIORS AND CORRELATES OF REPEAT PEER VICTIMIZATION IN FOUR LOW-RESOURCE COUNTRIES

4.1. ABSTRACT

Bullying is one of the most common forms of aggression experienced by school-aged youth, yet research is sparse in low-resource settings where cultural and contextual factors may influence victimization dynamics. We aimed to examine correlates of victimization and the prevalence of specific behaviors among youth in four low-resource countries. 3,536 youth in the Young Lives study cohorts in Ethiopia, India, Peru, and Vietnam reported frequency of past-year exposure to nine bullying behaviors at age 15. We calculated frequencies of these behaviors and used hurdle modelling to examine associations between three demographic correlates (sex, urban/rural setting, and school enrollment) and victimization separately by country. Mean victimization scores were 11.1 (sd=3.4) in Ethiopia, 13.4 (sd=4.4) in India, 14.9 (sd=4.7) in Peru, and 12.0 (sd=3.8) in Vietnam. With the exception of Peru, direct victimization was higher among boys, but relational victimization was not associated with sex. Physical bullying was reported with similar frequency as other forms in India, whereas in the other samples this form was less common. School status had very little association with victimization. Results suggest that culture may influence victimization dynamics and highlight the need to better understand patterns and variation of bullying victimization in LMIC. The finding that bullying is not restricted to school-going youth emphasizes the need for prevention efforts that take into account the needs of unenrolled youth.

4.2. INTRODUCTION

Bullying victimization – repeated exposure to negative actions over time by one or more peers in the context of a power imbalance¹ – is among the most common forms of aggression experienced by school-aged children.^{2,3} Exposure to bullying is a serious public health problem with well-documented psychosocial and health consequences in adolescence^{4–10} and lasting effects on mental health, wellbeing, and social functioning in adulthood.^{11–14} Most bullying research has focused on high-income countries, neglecting the nearly 90% of the world’s young people residing in low-and middle-income countries (LMIC).¹⁵ This remains the case, even though large multi-country studies such as the Health Behavior of School-Aged Children survey (HBSC)¹⁶ and Global School-Based Student Health Survey (GSHS)¹⁷ suggest that approximately one in three children is bullied worldwide,¹⁸ and that victimization is associated with poor psychosocial adjustment and risk behaviors in these settings.^{19–21} These studies also highlight wide variations in victimization prevalence, ranging from as low as 7% to as high as 70% across countries.¹⁸ Reasons for this variation are not clear, but don’t appear to be easily explained by regional differences or country-level indicators of wealth or social equality.²⁰

Measurement factors may influence prevalence estimates of bullying victimization across settings, not only due to cultural differences in what behaviors are perceived as aggressive, but also because the breadth of terms used to assess bullying exposure may differ across languages. Bullying victimization may take both direct and indirect forms of aggression, including physical and verbal bullying,

attacks on property, and relational victimization or social manipulation.¹ However, the term “bullying” is often difficult to translate; in a study examining how youth in 14 countries semantically defined a variety of peer interactions, Smith and colleagues demonstrated that some terms were better associated with all forms of bullying while others are a closer match to a specific form of bullying or other non-bullying acts of aggression.²² For example, bullying may be translated in Portuguese to *abuso*, to which youth attribute physical and verbal bullying but little social exclusion, while in Italian the translation of *prepotenza* encompasses all forms of bullying but also includes fighting without a power imbalance.²² It is therefore possible that when bullying victimization is assessed using a single question, respondents may be cued by the term used even if a description of bullying is provided, impacting cross-country comparability.²² The GSHS and HBSC surveys use this single-item *definition-based*²³ approach, (eg: “Bullying occurs when a student or group of students say or do bad and unpleasant things to another student. It is also bullying when a student is teased a lot in an unpleasant way or when a student is left out of things on purpose. It is not bullying when two students of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.”¹⁷), meaning that for much of the cross-cultural literature on bullying—and nearly all of the bullying literature in LMIC—the cross-country comparisons may be problematic and information on specific bullying experiences remains lacking.

This lack of understanding has led to calls for greater exploration of different forms of violence and aggression.²⁴ A few studies based on the GSHS have examined a follow-up question in which youth are given a list of victimizing behaviors and

asked to report which behavior they have experienced most frequently. By recording only a single behavior these studies are unable to capture the high correlation between forms of victimization, but already begin to illustrate differences in most frequently experienced behaviors across settings in Latin America, the Caribbean, and Southeast Asia.^{25,26} Expanded assessment of what behaviors victims are most likely to be exposed to in a particular setting would not only improve our understanding of how variation may contribute to overall prevalence estimates across settings, but would also facilitate tailored prevention initiatives.

Researchers have also highlighted the need to better understand how factors such as age, sex, culture, and context influence risk of exposure to different forms of victimization.²⁴ For example, research in Europe and North America suggests an overall decrease in victimization by age, a potential shift from direct to relational aggression through adolescence, and sex differences in which physical aggression is more common among boys while relational aggression is more common among girls [for reviews, see: Hong & Espelage²⁷; Stassen Berger²⁸]. While similar research in LMIC is sparse, these trends by age and sex have already been called into question. Higher prevalence among boys than girls has been observed in North Africa,²⁹ but not in Latin America and the Caribbean^{25,30} or sub-Saharan Africa.^{18,19} In South and East Asia, a UNICEF desk review suggested that girls may be more often victims of bullying than boys.³¹ Either an increase³² or no change in bullying by age has been observed in Sub-Saharan Africa,¹⁹ Latin America and the Caribbean.²⁵ In Thailand, bullying decreased with age in boys, but not girls.²⁶ These findings illustrate the

need for more research to clearly understand victimization dynamics in diverse cultures and contexts.

Additional social and contextual factors that are not typically considered in bullying research in high income settings may also be of particular relevance for understanding victimization risk in LMIC. For example, although bullying research is typically conducted in schools or with school-based samples, in LMIC with low educational attainment, a large proportion of youth in many LMIC are not in school, and youth who remain in school through adolescence are likely to be different in meaningful ways from their non-attending peers. It is unclear how school attendance in these settings may alter the dynamics of peer aggression, and this may be context specific. Focusing only on adolescents in school would therefore result in a biased understanding of peer interactions and risk for bullying victimization in the population.³³

Likewise, rapid urbanization in LMIC is changing the contexts in which young people develop, with urban environments representing vastly different social contexts than typically more traditional rural settings. Differences in daily activities and mobility, community cohesion, parental monitoring, and access to resources and technology may influence patterns of youth behavior and social interactions, resulting in potentially differential risk of victimization or differences in forms of victimization experienced.³⁴

The Young Lives (YL) study of childhood poverty³⁵ is an ongoing longitudinal cohort study that is well-suited to explore variation in bullying victimization across LMIC settings. The YL study is following two cohorts of children (starting at ages 1-

15 and ages 8-21) each in Ethiopia, India (in the states of Andhra Pradesh and Telangana), Peru, and Vietnam, capturing their development through adolescence and emerging adulthood. These four countries were selected to reflect a range of cultural and contextual differences – such as differences in religion, ethnic makeup, geography, inequality, urbanicity, and wealth. The school structure for all four countries can be divided into primary, lower secondary, and upper secondary school, although the number of years and the official ages at each level vary somewhat.³⁶ Nationally, primary school completion ranges from a high of 94% in Vietnam to a low of 24% in Ethiopia; the percentage of out-of-school youth age 15-18 ranges from 17% in Vietnam to 51% in India, and factors such as sex, urbanicity, and wealth tend to be associated with school enrollment.³⁶

Very little bullying research has been conducted in these settings, and what has been done, has been based on students sampled primarily from schools. In Ethiopia, Save the Children published a 2008 report that described girls' experiences of harassment and assault on the way to and from school.³⁷ Aberra also reported a study of high school youth from four schools in Addis Ababa in which 17% self-identified as bullied using a behavior checklist with name calling and being made fun of the most common behaviors reported.³⁸ In India, bullying victimization prevalence in different studies has ranged from 31-60%, although these studies have all been limited to students drawn from a few schools and none from Andhra Pradesh state.³⁹⁻⁴² Even so, findings have suggested prevalence is higher in urban areas, potentially higher among boys than girls, and that verbal aggression is the most frequently experienced form of bullying.³⁹⁻⁴² In Peru, 46% of boys and 48% of

girls age 13-15 participating in the GSHS study reported bullying victimization,⁴³ similar to the 44.5% prevalence reported in a UNESCO study of more than 4700 Peruvian youth.⁴⁴ The UNESCO study also reported higher verbal and physical victimization among boys but no sex difference in property victimization (relational victimization was not assessed), and no differences in exposure by urban or rural context;⁴⁴ to the contrary, a systematic review of four studies published in Spanish suggested geographical differences both in who was at risk for victimization and what form of victimizations were experienced.⁴⁵ In Vietnam, a GSHS study reported bullying prevalence among adolescents age 13-15 of 26% for both sexes,⁴⁶ whereas among 906 students in two schools in Northern Vietnam 59.5% of girls and 54.1% of boys reported being bullied at least “occasionally”.⁴⁷ Bullying has been linked to heightened risk of suicide for boys but not for girls in Vietnam.⁴⁸

More recently, a series of findings has been published regarding victimization among the Peruvian YL cohort included in the current study, showing victimization to be associated with poorer parent-assessed child health, as well as adolescent risk behaviors and emotional difficulties.⁴⁹⁻⁵¹ Another study including the younger YL Vietnam cohort reported bullying prevalence of nearly 20% among 8-year olds and noted that contrary to expectations, prevalence was not higher among poorer youth.³³ The goal of the present study was to build off this prior research to: 1) estimate the prevalence of overall bullying victimization across the four settings; 2) estimate the prevalence of repeat experiences of nine specific victimization behaviors; and 3) examine demographic correlates of victimization in each of the countries.

4.3. METHODS

4.3.1. STUDY DESIGN AND SAMPLE

This analysis uses cross-sectional data from the older Young Lives cohorts in Ethiopia, India, Peru, and Vietnam, collected in 2009 when the youth were 15 years old. Approximately 1000 children per country (fewer in Peru) were enrolled in the older cohort at age 8 and have been followed prospectively. Information on the sampling and interview methods used by the Young Lives team has been published elsewhere.⁵² Briefly, twenty sentinel sites in each country were purposely selected by local experts to reflect the range of living experiences in the country (or states, in the case of India). Approximately 50 children were randomly sampled from within each sentinel site. There were no exclusion criteria for participation in YL. Loss to follow-up has been minimal (less than 5% in all settings through age 15) and not specific to any demographic characteristics.⁵³ In addition to the caregiver and child interviews conducted at each time point, at age 15 youth also completed a self-administered questionnaire that assessed adolescent risk issues, including exposure to bullying victimization. The current analysis excludes 65 youth who are missing all bullying victimization data, resulting in sample sizes of: Ethiopia, $n=971$; India, $n=967$, Peru, $n=638$, and Vietnam, $n=960$.

Ethical approval for the Young Lives study was granted by the London School of Hygiene and Tropical Medicine.⁵⁴ The current secondary analysis was designated as not human subject research by the Institutional Review Board at the Johns Hopkins Bloomberg School of Public Health.

4.3.2. MEASURES

Bullying victimization. Experiences of bullying victimization within the past year were assessed using the self-administered, 9-item *Social and Health Assessment Peer Victimization Scale* (SAHA-PVS).^{55,56} The SAHA-PVS is an adapted version of the *Multidimensional Peer Victimization Scale*, which demonstrated good reliability ($\alpha=.82$) and validity in a US validation study.⁵⁶ The SAHA-PVS assesses exposure to nine bullying behaviors including physical, verbal, relational, and property victimization (see Figure 1 axis for list of behaviors). For each behavior, youth were asked to indicate frequency of experiencing it in the prior year; response options are 1 “never”, 2 “once”, 3 “2-3 times”, or 4 “4 or more times”. Summing response scores, a scale can be generated assessing total victimization with scores ranging from 9-36, and victimization subtype scores ranging from 2-8, with higher scores indicating greater victimization. The SAHA-PVS has been used in multiple studies internationally, including a number of studies with vulnerable youth in South Africa.^{51,57-61} In the YL study, the scale demonstrated good internal consistency across the four study countries, with Cronbach’s Alphas ranging from 0.76 in India to 0.80 in Ethiopia.

Demographic correlates. Demographic variables evaluated as potential correlates of bullying victimization were selected based on 1) their relevance in the literature, 2) their particular relevance in LMIC, and 3) their cross-country comparability. These included child sex (male/female), community context (urban/rural cluster as designated by the YL study team), and self-reported current school enrollment (yes/no). While we also considered whether to adjust for

ethnicity in the models, we ultimately determined not to do so as some sites had numerous ethnic groups making up only a small proportion of the samples, which would have required aggregating ethnic groups.

4.3.3. STATISTICAL ANALYSIS

SAHA-PVS scores and prevalence of bullying behaviors by sample. To emphasize the repetitive nature of bullying and to maintain consistency with prior research, we defined bullying exposure at the individual behavior level as reporting *two or more* experiences of that behavior in the past year.^{58,59,62,63} We calculated the proportion of youth experiencing each behavior two or more times using cross-tabulation with chi square tests to assess differences across samples. We also calculated total SAHA-PVS scores in each country, and examined overall prevalence of victimization in each sample using both the repeated behavior definition described above (exposed if they met exposure criteria for any item) as well as creating a dichotomous cutoff of “more” or “less” bullied using the country mean.

Correlates of bullying victimization and victimization subtypes. We used Cragg hurdle regression⁶⁴ to estimate associations between the selected demographic correlates and total SAHA-PVS score. As a majority of youth in each sample reported no bullying experiences, total score distributions demonstrated high lower bound inflation and right skew. Hurdle models are two-step regression models suitable to handle these distributional characteristics by specifying a probit model predicting clearance of a “hurdle” (eg: the lower bound) and a truncated linear model predicting positive scores conditioned on passing the hurdle. Considering the relevance of repetition in bullying victimization, we specified the

total victimization hurdle as a score of 10 (i.e. a single experience of victimization) so that the dichotomized outcome predicted by the probit model was scoring 11 or higher (i.e. “bullied” by experiencing at least two instances of aggression). The three demographic correlates were included in both the probit and linear model specification, to allow separate associations between any victimization and victimization severity. Because the coefficients of hurdle models cannot be directly interpreted, we also used post-estimation to calculate the adjusted marginal estimates of differences between levels of covariates. Victimization subtypes were similarly modeled. For the subtype models, we set the hurdle at 3 (i.e. a single experience of victimization) to again predict probability of scoring 4 or higher (i.e. experiencing at least two instances of victimization) within the subtype, consistent with typical bullying definitions. All models were fit separately by country, with clustered variance estimation to adjust standard errors for violations of independence due to within-country clustered sampling (which accounted for 5.8%, 14.5%, 0.4%, and 0.3% of the variance in the four samples, respectively). Statistical analysis was conducted using Stata 14.⁶⁵

Missing data. Only 2.5% of the total sample was missing any bullying data; of these, 65 youth were missing responses on one behavior, 12 were missing two behaviors, and 10 were missing three or more. Youth missing responses to all nine SAHA-PVS questions were previously excluded from the analysis. Behavior prevalences were calculated using only observed data, and total SAHA-PVS scores were prorated for missing responses. As missing data on covariates was negligible

(<1%; school enrollment was missing for 14 youth, and community type was missing in 5 cases), regression analyses were conducted using listwise deletion.

Table 4.1. Sample demographics by country.

	Ethiopia	India	Peru	Vietnam	p-value ^a
	(<i>n</i> =971)	(<i>n</i> =967)	(<i>n</i> =638)	(<i>n</i> =960)	
Age in Years, <i>mean</i> (SD)	15.0 (0.3)	15.0 (0.3)	14.9 (0.3)	15.1 (0.3)	<.001
% Male (vs. female)	50.9	49.3	52.7	49.4	.523
% Urban (vs. rural)	41.5	24.5	77.9	19.7	<.001
% In School (vs. unenrolled)	89.6	77.2	93.3	77.0	<.001
Highest Grade Completed, <i>mean</i> (SD)	5.5 (2.1)	8.2 (1.7)	7.9(1.1)	8.3 (1.3)	<.001
Among enrolled youth	5.7 (1.9)	8.6 (1.2)	7.9 (1.1)	8.6 (0.8)	<.001
Among unenrolled youth	3.5 (2.3)	6.5 (2.2)	6.7 (0.6)	7.3 (2.0)	<.001

^aTested using chi-square for categorical and ANOVA for continuous variables.

4.4. RESULTS

Sample demographics are reported in Table 4.1. The four country samples had similar proportion of males and females and were similar in mean age, with variation in urbanicity and percent school enrollment. Likewise, whereas the youth in India, Peru, and Vietnam had roughly an 8th grade education, Ethiopian youth had on average a 5th-6th grade education. Unenrolled youth had stopped attending school at the average ages of 13.2 (*sd*=1.5; India), 12.1 (*sd*=2.4; Peru), 13.3 (*sd*=1.0; Vietnam), and 13.6 (*sd*=1.5; Ethiopia), and had between 1-2 years lower educational attainment than currently enrolled youth. Across the samples, nearly all youth (more than 99%) who were not enrolled in school reported that their typical days included one or more of the following activities: working for money outside the

home (38.8%), caring for others (30.4%), doing domestic tasks (85.7%) or tasks on the family farm (45.7%), and studying (6.9%).

4.4.1. BULLYING VICTIMIZATION PREVALENCE

Table 4.2 reports country mean SAHA-PVS scores and comparisons of the two classification methods for examining bullying victimization. The country mean SAHA-PVS scores were 11.1 ($sd=3.4$) in Ethiopia, 13.4 ($sd=4.4$) in India, 14.9 ($sd=4.7$) in Peru, and 12.0 ($sd=3.8$) in Vietnam. Using the repeated behavior definition 27.4, 56.4, 61.5, and 38.6% of youth were classified as “bullied” by sample, and of these, 14.3%, 21.0%, 19.4%, and 14.7% were further classified as “severely bullied” by reporting repeated experiences of four or more behaviors. Using the country mean as a dichotomous cut-point, 28%, 38.8%, 44%, and 32.2% of the samples were defined as “more bullied”, respectively. In total, these two definitions resulted in the same high vs. low risk classification for all but 463 (13.2%) youth. 11.2% of youth were classified as “bullied” using the repeated behavior definition but “less bullied” using the country mean cut-point; alternatively, 2.1% of youth were classified as “not bullied” using the repeated behavior definition but “more bullied” using the country mean score. The disagreement was largest in India and Peru, where 18.9% and 17.3% of youth were differently classified by method. This suggests that in these cases experiencing a single form of victimization was driving their categorization as “bullied”, but that overall these youth were still victimized less frequently than their “more bullied” peers.

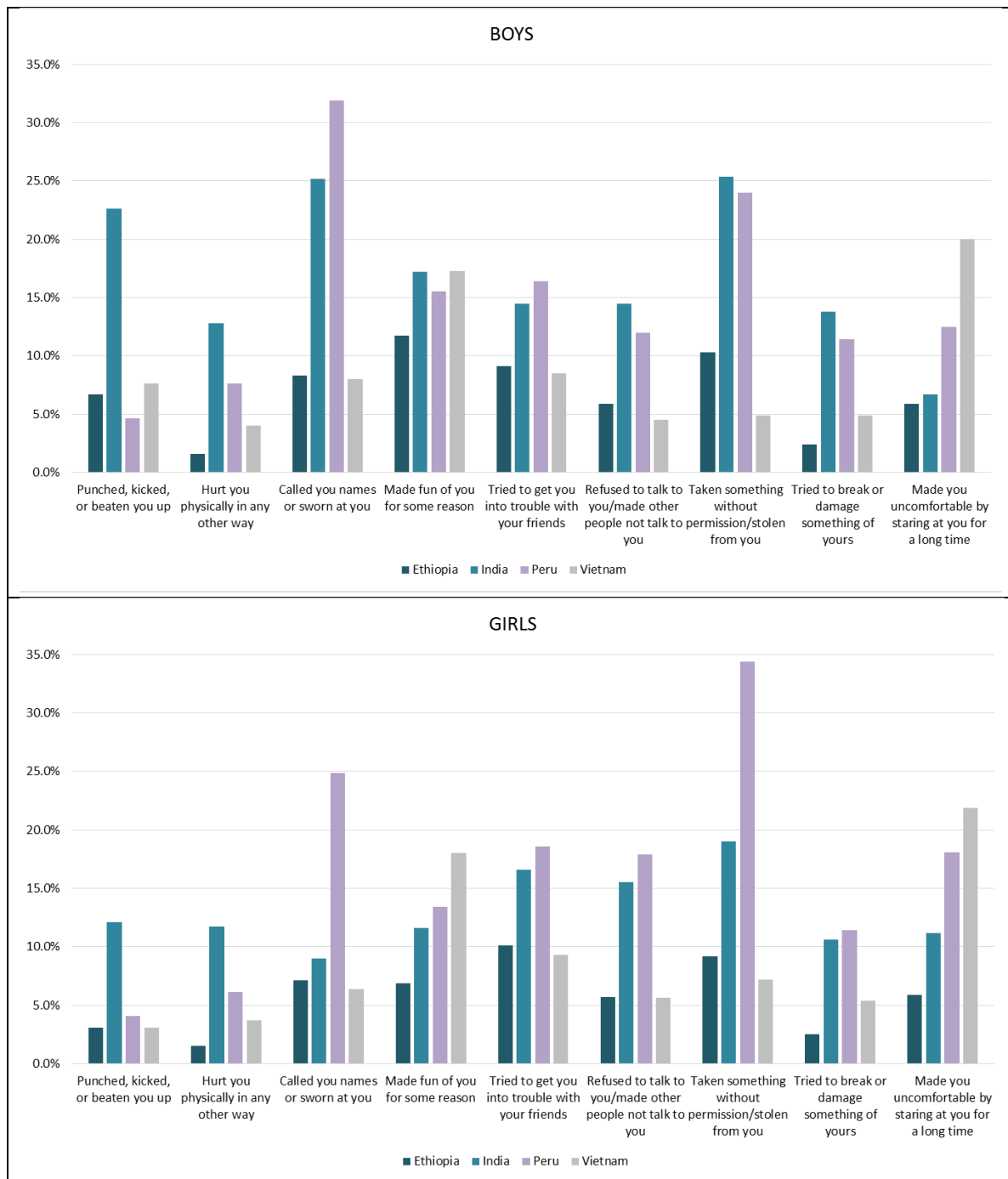
Table 4.2. Comparison of classification methods for assessing prevalence of bullying victimization.

	Ethiopia	India	Peru	Vietnam
	<i>(n=971)</i>	<i>(n=967)</i>	<i>(n=638)</i>	<i>(n=960)</i>
Mean SAHA-PVS	11.1 (3.4)	13.4 (4.4)	14.9 (4.7)	12.0 (3.8)
% “Bullied” by repeated behavior				
All	27.4	56.4	61.5	38.6
Boys	32.5	58.3	59.9	36.6
Girls	22.2	54.5	63.3	40.6
% “More bullied” using country-mean cut-point				
All	28.2	38.8	44.0	32.2
Boys	32.8	43.4	41.4	31.2
Girls	23.5	34.3	47.0	33.1
% Overall Agreement	92.0	81.1	82.7	89.8
% “Bullied” but not “More Bullied”	3.6	18.2	16.6	8.2
% “More bullied” but not “Bullied”	4.4	0.6	0.7	2.0

4.4.2. INDIVIDUAL BEHAVIOR PREVALENCE

Prevalence for repeated experience of individual behaviors ranged from 1.5% to 9.8% in Ethiopia, 9.0% to 22.1% in India, 4.3% to 28.9% in Peru, and 3.9% to 21.0% in Vietnam. Only four behavior prevalences exceeded 20%: having something taken without permission/stolen in both India (22.1%) and Peru (28.9%); being called names or sworn at in Peru (28.6%); and being made uncomfortable by being stared at in Vietnam (21.0%). With the exception of being made fun of, which was similar in all four settings ($p=.055$), we observed significant differences in prevalence of all behaviors across samples ($p<.001$).

Figure 4.1. Percentage of boys and girls reporting two or more experiences of each behavior.



In Ethiopia, India, and Peru, the most commonly reported experience was having something taken without permission/stolen, whereas this experience was not commonly reported in Vietnam (6.1%). Rather, in Vietnam the most commonly

reported experience was being made uncomfortable by being stared at (21.0%); a behavior that ranked lower in the other settings. In Ethiopia, Peru, and Vietnam, physical behaviors were not highly reported, with 4.9%, 4.3%, and 5.3% of youth reported being punched/kicked/beaten up, and 1.5%, 6.9%, and 3.9% of youth reporting being hurt physically in other ways. This is in contrast to India, where being punched/kicked/beaten up was the second most common behavior (17.3%) and being hurt physically in other ways ranked 7th but was still reported by 12.2% of youth. The verbal and relational behaviors and property damage shifted in rank order across samples but generally fell in the middle of the prevalence rankings. Figure 4.1 provides further breakdown of the variation in repeat experience of each of the behaviors by country sample for boys and girls separately.

4.4.3. DEMOGRAPHIC CORRELATES OF VICTIMIZATION

Table 4.3 displays the proportion of youth in each sample exceeding the initial cut-off scores of both total (11 or higher) and subtype (4 or higher) victimization score. Table 4.4 displays adjusted estimates for the probit (i.e. any victimization) and truncated linear (i.e. victimization severity) models predicting both total victimization score and victimization subtypes, while Table 4.5 displays marginal estimates of the difference in score between levels of covariates.

Table 4.3. Percent of youth meeting cutoff of repeat experiences.

	Ethiopia	India	Peru	Vietnam
	<i>(n=971)</i>	<i>(n=967)</i>	<i>(n=638)</i>	<i>(n=960)</i>
	%	%	%	%
Total scale	38.2	68.7	85.4	54.3
Boys	42.3	70.9	83.6	53.0
Girls	34.0	66.5	87.4	55.6
Physical subscale	7.6	28.0	13.4	9.4
Boys	11.3	35.0	15.3	12.9
Girls	3.8	21.1	11.3	6.0
Verbal subscale	16.7	29.2	50.2	24.1
Boys	19.0	37.3	55.6	23.9
Girls	14.3	21.3	44.1	24.2
Relational subscale	16.1	30.0	38.0	16.0
Boys	16.9	29.1	32.6	16.3
Girls	15.3	30.9	43.9	15.7
Property subscale	13.0	32.8	43.9	12.4
Boys	13.6	37.7	38.8	10.6
Girls	12.4	28.0	49.7	14.2

*Cutoff of ≥ 11 for total victimization and ≥ 4 for victimization subscales

Table 4.4. Correlates of bullying victimization exposure and severity by total score and subtype.

	Ethiopia		India		Peru		Vietnam	
	<i>(n=970)</i>		<i>(n=961)</i>		<i>(n=638^a)</i>		<i>(n=949^a)</i>	
	Any	Severity	Any	Severity	Any	Severity	Any	Severity
	β (se)	β (se)	β (se)	β (se)	β (se)	β (se)	β (se)	β (se)
Total Score								
Boys	.23 (.11)*	.08 (4.66)	.13 (.18)	4.07 (1.30)**	-.18 (.13)	-.34 (.97)	-.07 (.07)	.60 (1.48)
Urban	.33 (.14)*	2.76 (3.84)	-.18 (.23)	-3.23 (1.17)**	.26 (.14)	2.25 (1.10)*	-.02 (.14)	-.49 (1.87)
Out of School	-.04 (.12)	5.07 (9.03)	.01 (.14)	-.35 (.83)	.12 (.27)	.00 (2.22)	.12 (.11)	6.64 (2.52)**
Physical Victimization								
Boys	.56 (.15)**	-1.05 (.63)	.42 (.14)**	.25 (.30)	.15 (.12)	-.08 (.26)	.42 (.12)**	-.49 (.33)
Urban	.19 (.18)	.33 (.26)	-.59 (.24)*	-.58 (.31)	-.12 (.10)	-.21 (.36)	-.22 (.13)	-.07 (.33)
Out of School	.25 (.26)	.27 (.38)	.05 (.13)	-.26 (.21)	.16 (.24)	-.47 (.48)	.28 (.12)*	.20 (.41)
Verbal Victimization								
Boys	.19 (.12)	-.00 (.26)	.50 (.15)**	.52 (.20)*	.32 (.08)**	-.09 (.22)	-.04 (.07)	.39 (.21)
Urban	.19 (.15)	.17 (.27)	-.14 (.14)	-.46 (.14)**	.39 (.09)**	.37 (.20)	.12 (.14)	-.29 (.21)
Out of School	.21 (.19)	.06 (.35)	.32 (.10)**	.07 (.19)	-.11 (.22)	.12 (.40)	.17 (.12)	.52 (.20)**

*p<.05, **p<.01; Reference groups: Girls, Rural youth, youth in school; In Peru, *n* for subtype analyses ranges from 632 to 636; in Vietnam, *n* for relational subtype is 948.

Table 4.4. Correlates of bullying victimization exposure and severity by total score and subtype (continued).

	Ethiopia		India		Peru		Vietnam	
	<i>(n=970)</i>		<i>(n=961)</i>		<i>(n=638^a)</i>		<i>(n=949^a)</i>	
	Any	Severity	Any	Severity	Any	Severity	Any	Severity
	β (<i>se</i>)	β (<i>se</i>)	β (<i>se</i>)	β (<i>se</i>)	β (<i>se</i>)	β (<i>se</i>)	β (<i>se</i>)	β (<i>se</i>)
<i>Relational Victimization</i>								
Boys	.07 (.14)	-.35 (.39)	-.04 (.13)	-.08 (.18)	-.30 (.08)**	-.13 (.24)	.00 (.09)	-.28 (.20)
Urban	.16 (.15)	.39 (.30)	.03 (.13)	-.18 (.29)	.49 (.12)**	.44 (.28)	-.11 (.10)	-.12 (.17)
Out of School	-.07 (.19)	.50 (.27)	-.07 (.10)	.22 (.16)	.24 (.25)	.25 (.46)	.24 (.12)	.34 (.27)
<i>Attacks on Property</i>								
Boys	.08 (.11)	-.39 (.41)	.27 (.10)*	.16 (.21)	-.28 (.12)*	.19 (.19)	-.20 (.08)*	-.14 (.19)
Urban	.36 (.15)*	-.47 (.43)	-.08 (.13)	-.18 (.22)	.26 (.13)*	.00 (.26)	.03 (.13)	-.57 (.33)
Out of School	-.13 (.17)	.17 (.41)	-.35 (.10)**	-.23 (.17)	-.09 (.17)	-.34 (.27)	.17 (.12)	.56 (.40)

* $p < .05$, ** $p < .01$; Reference groups: Girls, Rural youth, youth in school; In Peru, n for subtype analyses ranges from 632 to 636; in Vietnam, n for relational subtype is 948.

Overall victimization. In Ethiopia, probability of any victimization exposure was higher for both boys ($\beta=.23$, $p=.043$) and urban youth ($\beta=.33$, $p=.022$) compared to girls and rural youth; conditioning on exposure, no covariates were associated with severity of victimization. In total, there were no significant differences in conditional mean estimates between levels of any of the three covariates in Ethiopia. In the other three country samples, no demographic variables were significantly associated with probability of exposure. Conditioning on exposure, Indian boys experienced more severe victimization than girls ($\beta=4.07$, $p=.002$), while urban youth experienced less severe victimization than rural peers ($\beta=-3.23$, $p=.006$); the total model predicted a 1.15 point higher score for boys than girls ($p=.029$). In Peru, only urbanicity was significantly correlated with severity ($\beta=2.25$, $p=.041$), predicting a 1.05 marginal increase in score for urban youth ($p=.010$). Vietnam was the only sample for which school enrollment status was significantly correlated, with unenrolled youth experiencing significantly greater victimization severity ($\beta=6.64$, $p=.008$) and a total score increase of .89 ($p=.001$) compared to school-enrolled youth.

Victimization subtypes. In the Ethiopian subtype models, boys had higher probability of physical victimization than girls ($\beta=.56$, $p<.001$), and urban youth had higher probability of property victimization than rural youth ($\beta=.36$, $p=.017$). Among the youth in India, boys had higher probability than girls for physical ($\beta=.42$, $p=.002$), verbal ($\beta=.50$, $p=.001$), and property victimization ($\beta=.27$, $p=.011$); additionally, boys reported higher severity of verbal victimization ($\beta=.52$, $p=.011$). Urban youth in India had lower probability of physical victimization ($\beta=-.59$,

p=.015) and similar probability of exposure but lower severity of verbal victimization ($\beta=-.46$, $p=.001$), while unenrolled youth had higher probability of verbal ($\beta=.32$, $p=.002$) and lower probability of property victimization ($\beta=-.35$, $p=.004$) than school-attending peers. Peruvian boys had higher probability of verbal ($\beta=.32$, $p<.001$), but lower probability of relational ($\beta=-.30$, $p<.001$) and property ($\beta=-.28$, $p=.020$) victimization than Peruvian girls. Urban youth in Peru had higher probability for verbal ($\beta=.39$, $p<.001$), relational ($\beta=.49$, $p<.001$), and property ($\beta=.26$, $p=.048$) victimization than rural youth. In Vietnam, boys had higher probability of physical victimization ($\beta=.42$, $p<.001$) and lower probability of property victimization ($\beta=-.20$, $p=.014$) than girls, while out of school youth had higher probability of physical victimization ($\beta=.28$, $p=.018$) and similar probability but higher severity of verbal victimization ($\beta=.52$, $p=.009$) than school-attending youth. These associations translate to modest but significant differences in conditional mean subtype scores (Table 4.5).

Table 4.5. Conditional mean difference between levels of covariates.

	Ethiopia		India		Peru		Vietnam	
	<i>(n=970)</i>		<i>(n=961)</i>		<i>(n=638)</i>		<i>(n=949)</i>	
	β	<i>(se)</i>	β	<i>(se)</i>	β	<i>(se)</i>	β	<i>(se)</i>
<i>Total Score</i>								
Boys	.37	(.70)	1.15*	(.53)	-.35	(.32)	-.06	(.18)
Urban	.63	(.92)	-1.06	(.72)	1.04*	(.41)	-.08	(.35)
Out of School	.16	(.46)	-.10	(.32)	.16	(.70)	.89**	(.27)
<i>Physical Victimization</i>								
Boys	.07	(.05)	.31**	(.11)	.05	(.06)	.10*	(.04)
Urban	.06	(.05)	-.49**	(.19)	-.07	(.06)	-.08	(.04)
Out of School	.07	(.06)	-.08	(.09)	.02	(.11)	.10**	(.03)
<i>Verbal Victimization</i>								
Boys	.08	(.07)	.43**	(.10)	.22**	(.08)	.04	(.06)
Urban	.11	(.08)	-.19	(.11)	.44**	(.10)	.02	(.10)
Out of School	.10	(.10)	.22**	(.08)	-.04	(.25)	.19	(.06)
<i>Relational Victimization</i>								
Boys	-.01	(.07)	-.05	(.10)	-.25**	(.08)	-.03	(.05)
Urban	.11	(.07)	-.02	(.13)	.46**	(.10)	-.06	(.04)
Out of School	.02	(.09)	.01	(.07)	.24	(.18)	.14*	(.06)
<i>Attacks on Property</i>								
Boys	-.00	(.05)	.22	(.12)	-.16	(.10)	-.08**	(.03)
Urban	.09	(.06)	-.10	(.11)	.20	(.13)	-.04	(.04)
Out of School	-.03	(.08)	-.29**	(.10)	-.17	(.14)	.11*	(.04)

*p<.05, **p<.01

Reference groups: Girls, Rural youth, youth in school

Sample sizes for subtype analyses vary, with decreases up to 3.6% from total score analyses.

4.5. DISCUSSION

Using a standard bullying scale, bullying victimization was highest in Peru, where the average score of 14.9 is equivalent to an average of nearly 6 experiences of victimization per youth. In Ethiopia, where prevalence was lowest, the average score of 11.1 still equates to an average of two victimization experiences per person, highlighting that repeat peer aggression is a common occurrence across these settings. Regardless of which cut-off score was used, the prevalence estimates of bullying victimization in these samples are generally aligned with or slightly higher than estimates from other studies in these settings.^{38–42,45,46,66} Higher estimates could be due to multiple causes: a self-administered questionnaire that facilitates full reporting, a behavior checklist that reduces discrepancies due to translation differences in the word “bullying”, and also very likely some misclassification of violence between similar-powered peers as bullying due to our inability to account for the power dynamics of the relationship.

4.5.1. INDIVIDUAL BEHAVIORS

Comparing across countries, it appears that most behaviors contributed to the higher prevalence estimates in India and Peru, although two in particular (being called names/sworn at, and having something taken/stolen) appeared to be disproportionately higher in these settings (less so among girls in India). Experiences that deviated from this trend were being made fun of, where there was little difference across countries, and being stared at, which had higher reporting in Vietnam among both boys and girls. Additionally, while physical bullying acts were

less prevalent than other behaviors in most samples, these acts were reported to have similar prevalence as other behaviors among both boys and girls in India, and were more prevalent in India than the other three settings.

Given that the SAHA-PVS does not assess power imbalance, it is possible that some of those experiences contributing to disproportionately high item prevalence may be interactions that would not meet the traditional bullying definition but are simply more prevalent in these contexts. For example, Crookston and colleagues found that repeated exposure to property victimization did not have expected associations with health risk behaviors in the Peru sample;⁵¹ perhaps these acts were due to more opportunity rather than malicious intent, or were not necessarily within an imbalanced power relationship. However, an assumption that higher assessed prevalence simply reflects more prevalent behavior in a setting would lead one to expect that other national statistics reflect similar trends, and here the statistics are mixed: for example, while both the India and Peru sample reported higher prevalence of repeat theft, in national crime statistics these two countries rank in the lowest and highest quartiles for robbery, respectively.⁶⁷ Additionally, the high reports of name calling reflect similar findings from other bullying studies conducted in India,³⁹⁻⁴² and a study of 16 countries in Latin America (including Peru) found that the most frequent form of victimization in all countries was theft, followed by verbal violence.⁴⁴ These previous findings lend support for the interpretation that these behaviors were acts of bullying in the current study.

One exception to the overall pattern of behaviors was the higher reporting of being made uncomfortable by staring in Vietnam than in other countries. This may

be an example of behaviors for which different meaning is attributed across cultures; research suggests that East Asians may perceive eye contact as more hostile compared to the perceptions of people from Western cultures.⁶⁸ In Vietnamese culture it has been observed that avoiding eye contact is a sign of respect, and that eye contact may be perceived as a challenge.⁶⁹ Because of potential sensitivity to eye contact in Vietnam, it may be that uncomfortable staring is more readily perceived both within and outside of bullying relationships. Additional qualitative work would improve our understanding of the role of staring – a potential act of space invasion or intimidation – among Vietnamese youth.

The higher prevalence of physical bullying we found in India aligns with another Indian study reporting that 16% of youth had been physically bullied.⁴² Two similar studies reported lower prevalence of 5-7% within the overall sample, but still ranked prevalence of physical victimization only lower than verbal victimization in terms of frequency.^{39,40} Use of interviewer-administered questionnaires in the prior studies may have led to lower reporting of physical abuse, which could explain the smaller difference between prevalence of physical and verbal victimization in our study. While the previous studies may have been better able to avoid misclassification of physical fights as bullying as well, this would not explain why physical and non-physical victimization were reported at similar rates among the Indian youth but not youth in the other three samples. Indeed, a qualitative PhotoStory study of bullying among youth in the Punjab reported that a large proportion (39%) of the stories students submitted were about physical acts, suggesting that youth themselves see this as a problem regardless of whether it

meets strict bullying criteria.⁷⁰ Overall, our findings align with prior research highlighting the burden of physical victimization among Indian youth. Outside of bullying research, multiple aggression studies among Indian youth have noted high rates of physical aggression that would provide support for the high prevalence of physical victimization we observed. For example, two similar studies of aggression each among over 300 high school students both reported prevalence of past-month aggression between 65-70%.^{71,72}

4.5.2. DEMOGRAPHIC CORRELATES OF VICTIMIZATION

We found relatively few associations between any of the demographic variables and overall victimization exposure. Being male was a risk factor in Ethiopia and India, but the association in Ethiopia was small enough that the difference in total score was not significant once both exposure and severity were considered. Terefe and Mengistu⁷³ previously reported a higher sex difference in Ethiopia but studied school violence rather than bullying specifically; if that study placed more emphasis on physical aggression it would make sense that the difference would decrease, as we found the increased risk for boys was specific to physical bullying. Whereas the sex difference in India was stronger and consistent across most subtypes, the lack of a sex difference in overall exposure in Peru and Vietnam may be because nearly equally strong associations in opposite directions among subtypes cancelled each other out. This illustrates the importance of asking more than a one overall bullying question, as it can mask important differences in risk that would be relevant for directing prevention efforts. With the exception of Peru, this study does align with frequent findings that physical victimization is more

common among boys, but it does not support the corollary that relational victimization is more common among girls; a previous meta-analysis of 107 studies from mostly high income countries also reported very little support for a meaningful difference in indirect aggression by sex.⁷⁴

A major contribution of this study is the consideration of urbanicity and school status, which has rarely been done to date. Whereas previous research in Ethiopia has focused on schools only in Addis Ababa,^{38,73} we found that urban youth may be at slightly higher risk overall but this risk is driven primarily by higher prevalence of attacks on property in urban settings, and that any such differences are negligible once both exposure and severity are considered. Contrary to previous Indian research that generally suggests higher prevalence among urban youth,³⁹⁻⁴² we found prevalence – particularly of direct forms of victimization - was actually lower among urban youth once adjusting for sex and school status. Reasons for this contradiction are unclear, but it should be noted that previous studies either focused entirely on an urban or rural sample or drew comparisons between only a few schools, which could impact conclusions. These quantitative data suggesting greater prevalence among urban youth in Peru are supported by qualitative research in the Young Lives study⁷⁵ as well as a greater body of literature on violence highlighting the role of rapid urbanization in Latin America.⁷⁶ While our results do contradict findings from the UNESCO study of 16 Latin American countries in which Peru was an exception to the overall findings of greater risk of victimization in urban contexts,⁴⁴ that study did not include relational victimization, which we found to have the strongest association with urbanicity.

Regarding prevalence of victimization by school enrollment, perhaps the most important finding was the very few significant associations at all, with most of those that were significant suggesting increased risk among unenrolled students - particularly for physical and verbal aggression. This highlights the need to expand bullying research beyond the school environment to gain a better understanding of the full picture of risk in contexts where a large proportion of youth may not be in school, and to inform prevention programs that will be relevant to unenrolled youth. Nguyen and Tran³³ previously noted this in Vietnam, suggesting that an observed drop in bullying prevalence at different time points may have been due to a change in whether the question was restricted to bullying at school.

4.5.3. LIMITATIONS

This study does have important limitations. First, the questionnaire did not assess the power imbalance in these encounters, potentially contributing to misclassification of some experiences. By drawing on a standard questionnaire, the study also excludes culturally unique forms of victimization. For example, previous qualitative research in India reported a form of bullying in which a student wrote another student's parents' names on the blackboard at school as a way of making fun of the student,⁷⁰ and students in Ethiopia have reported an act in which a bullied student was engaged in a conversation that the student thought to be serious but was in fact one or more students using the conversation as a means to ridicule them.³⁸ It is unclear whether students responding to the SAHA-PVS would include these behaviors, perhaps under the question assessing being made fun of. Other such behaviors may also exist in these settings that would be important to

understand but perhaps not assessed in the current study; future qualitative research would be useful to identify such behaviors. The SAHA-PVS also does not assess cyberbullying; again, some cyberbullying may be included under existing questions such as the relational and verbal behaviors, but it is increasingly important to directly assess cyberbullying. With regards to the analysis of covariates, we restricted our analyses to only the most basic demographic variables and excluded variables such as ethnicity that were not comparable across contexts, so cannot exclude the potential of residual confounding. Lastly, this largely exploratory analysis relied on multiple comparisons, for which further research and confirmation is needed.

Even acknowledging these limitations, this study is an important addition to the dearth of bullying research in LMIC. Strengths of the present study include the use of samples drawn from broader geographical areas than previous research, which has typically been based on samples in only a few schools. Additionally, by using a sample that was originally recruited at age 8, we were able to include youth who were no longer enrolled in school and thereby assess the risk of bullying victimization among unenrolled youth. By using a 9-item behavioral measure, this study also expands on findings from previous research that did not assess specific behaviors, providing a greater understanding of how the use of common bullying behaviors may vary across cultures and settings. Lastly, using a self-administered questionnaire is likely to have improved reporting of sensitive issues among adolescents.

4.5.4. CONCLUSIONS

By examining specific bullying behaviors as well as understudied correlates of relevance, this study is an important contribution to the literature in LMIC. Results suggest that culture may influence factors such as what kinds of bullying are most prevalent and how frequent bullying occurs to girls vs. boys. While some similar patterns were identified across countries, notable differences highlight the need to better understand patterns and variation of bullying victimization in these settings. Likewise, while youth bullying is often discussed within a school context, the finding that bullying is not restricted to school-going youth in these settings is important for informing prevention efforts that take into account the needs of unenrolled youth. Further research – particularly qualitative research – would be helpful to both elucidate reasons for some of the current findings and to identify culturally specific behaviors that are potentially not accounted for in a standard questionnaire.

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CHAPTER 5: A LATENT CLASS APPROACH TO UNDERSTANDING PATTERNS OF PEER VICTIMIZATION IN FOUR LOW-RESOURCE SETTINGS

5.1. ABSTRACT

Bullying is a common form of aggression among school-aged youth, but research is sparse regarding victimization dynamics in low-resource settings. Person-centered approaches have demonstrated utility in understanding patterns of bullying victimization in the US. We aimed to empirically identify classes of youth with unique victimization patterns in four low-resource settings using latent class analysis. We used data on past-year exposure to nine victimizing behaviors reported by 3,536 youth (age 15) in the Young Lives study in Ethiopia, India, Peru, and Vietnam. Behavior indicators were dichotomized as “no” vs. “any” exposure. Sex and community context were examined as predictors of class membership. Data supported a 2-class model in Peru, a 3-class model in Ethiopia and Vietnam, and a 4-class model in India. Classes were predominantly ordered by severity, suggesting that youth who experienced one form of victimization were likely to experience other forms as well (eg: physical, verbal, relational). In India, two unordered classes were also observed, characterized by direct and indirect victimization. Boys were more likely than girls to be in the highly victimized class in Ethiopia and India. Urban contexts conferred higher risk of bullying in Ethiopia and Peru, and lower risk in India and Vietnam. The identified patterns of multiple forms of victimization highlight a limitation of common researcher-driven classifications and suggest avenues for future person-centered research to improve intervention development.

5.2. INTRODUCTION

Bullying impacts as many as one in three children and adolescents worldwide¹ with multiple, and sometimes severe, psychosocial and health consequences during childhood and adolescence²⁻⁸ and extending into adulthood.⁹⁻¹² Because most bullying research has been conducted in high-income countries, we know less about the dynamics of these victimization experiences among the majority of the world's youth who live in low-and middle-income countries (LMIC).¹³ The limited research from LMIC illustrates that victimization is associated with poor psychosocial adjustment and risk behaviors in these settings as well.¹⁴⁻¹⁶

Most research on bullying that has been conducted in LMIC uses data from the Global School-based Student Health (GSHS) survey,¹⁷ which uses a single question, *definition-based*^{18,19} assessment of bullying victimization. In this approach youth are provided a description of what bullying is (eg: "Bullying occurs when a student or group of students say or do bad and unpleasant things to another student. It is also bullying when a student is teased a lot in an unpleasant way or when a student is left out of things on purpose. It is not bullying when two students of about the same strength or power argue or fight or when teasing is done in a friendly and fun way."¹⁷) and are asked a single question regarding how frequently they have been bullied over the past 30 days. This limits our ability to understand potentially meaningful language differences in the translations used and precludes deeper exploration of experiences in these settings.²⁰

In contrast to the above approach some researchers employ a *behavior-based* assessment,¹⁸ using a standard scale to assess exposure to individual behaviors (eg:

during the last 12 months, we want to know whether other young people...called you names; tried to get you into trouble with your friends; beat you up^{21,22}). Responses can then be used to classify youth into groups by severity levels or by specific sub-types of victimization (eg: physical, verbal) in typical variable-centered analyses. While this approach is often used in high-income countries and allows for greater examination of victimization experiences compared with the single item approach, it also has limitations in terms of utility for meaningful classification of groups of youth. Nylund and colleagues have reviewed these measurement challenges in detail,²³ highlighting the classification problems resulting from either an arbitrary or distribution-based cut-off score for examining severity, as well as a failure to account for correlations between behaviors when examining victimization subtypes (eg: verbal, physical, relational).

Increasingly, person-centered approaches such as latent class analysis (LCA) are used to examine meaningful heterogeneity within populations for developmental research.^{24–26} Based on the assumption that an underlying latent trait accounts for patterns of responses to a set of observed, discrete variables, LCA examines patterns of responses and classifies individuals into unobserved subgroups (latent classes) of similar individuals.²⁶ This allows for the use of LCA to examine typologies—in this case, groups of youth with similar *patterns* of victimization experiences that are explained by latent class membership.²⁷ Researchers using LCA to study bullying victimization have highlighted its flexibility in allowing class membership to be determined by a combination of severity and form characteristics, therefore accounting for overlapping experiences.^{23,28}

In a longitudinal US study of over 2,000 urban middle schoolers, Nylund and colleagues identified three ordered latent classes that distinguished victimization based on frequency (i.e.: “nonvictimized”, “sometimes victimized” and “victimized”) and found that these classes were better at predicting subsequent depressive symptoms than raw scores.²³ Bradshaw and colleagues have used LCA to examine *forms* of peer victimization by age among over 17,000 students in the US, and found that while middle school students were best categorized by four discrete classes, high school students were better categorized by only three classes. They also found sex differences in most likely class membership, with boys more likely than girls to be in classes that included physical victimization.²⁸ These studies demonstrate the heterogeneity in bullying experiences and illustrate how studying victimization typology can improve identification and subsequent interventions.

Using nine behavioral items, we previously took a variable-centered approach to examining bullying victimization and victimization subtypes among 15-year old youth in four LMIC settings: Ethiopia, India, Peru, and Vietnam. While some similar patterns were identified across countries, notable differences highlighted the need to better understand patterns and variation of bullying victimization in LMIC (Chapter 4). The purpose of the present study was to extend this line of research by taking a person-centered approach to examine unique patterns of bullying victimization in these samples. We aimed to empirically identify groups of youth (all 15-year olds) with different victimization patterns by country. As our previous research identified both child sex and community context as important correlates of victimization (Chapter 4), we evaluated these as potential predictors of

class membership. Caregiver report of youth victimization exposure was used to validate latent class structures.

5.3. METHODS

5.3.1. SAMPLE

We used archived data collected in 2009 as part of the Young Lives study,²⁹ a longitudinal cohort study in four countries. Cross-sectional data is available for 15-year old youth in Ethiopia ($n=971$), Andhra Pradesh and Telangana states in India ($n=967$), Peru ($n=638$), and Vietnam ($n=960$). Youth were randomly sampled at age 8 from 20 sentinel sites per country and have been followed prospectively. Approximately 50 children were originally recruited from each site, with minimal (<5%) loss to follow-up that was relatively uniform across demographic characteristics.³⁰ Detailed information on the sampling and interview methods used by the Young Lives team has been published elsewhere.³¹ At age 15, youth completed a self-administered questionnaire that assessed a variety of adolescent risk issues, including exposure to bullying victimization. The primary caregiver also completed an interview. The present study excluded 65 youth with missing bullying data. Ethical approval for the Young Lives study was granted by the London School of Hygiene and Tropical Medicine;³² approval for the current secondary analysis was granted by the Institutional Review Board at the Johns Hopkins Bloomberg School of Public Health.

5.3.2. MEASURES

Bullying victimization. Youth were asked to report whether they had experienced each of nine victimizing behaviors within the past year using the self-administered *Social and Health Assessment Peer Victimization Scale*,^{21,22} which has been used in multiple studies internationally.³³⁻³⁸ The questions asked: *during the last 12 months, we want to know whether other young people...* called you names or swore at you; tried to get you into trouble with your friends; took something without permission or stole things from you; made fun of you for some reason; made you uncomfortable by staring at you for a long time; punched, kicked or beat you up; hurt you physically in some other way; tried to break or damaged something of yours; refused to talk to you or made other people not talk to you. For brevity, we refer to these variables as: *names/swear, friend trouble, theft, make fun, staring, hit/beat, hurt-other, property damage, and refuse to talk*. Original response options of “never”, “once”, “2-3 times”, or “4 or more times” were recoded as binary (“none” vs. “any”) exposure for the present analysis. Missingness by item peaked at 0.1% in Ethiopia, 0.2% in India, 3.0% in Peru, and 0.6% in Vietnam.

Demographic predictors of class membership. Demographic variables included child sex and community context. Community context was a binary (urban/rural) cluster-level variable assigned by the Young Lives research team. This variable was missing for 14 youth (<1%).

Caregiver report of youth victimization. Caregivers were interviewed and responded to a single yes/no question asking if their child had ever been bullied by peers. This variable was missing for 87 youth (no more than 4.5% missing in any

sample). We used caregiver report to provide a measure of construct validity for the latent classes; while we would expect a level of disagreement and lower identification of victimization by caregivers than the youth themselves,^{39,40} validity would be supported if trends suggested caregivers were more likely to recognize victimization in more severe cases and those with direct (i.e. more visible) aggression.^{41,42}

5.3.3. STATISTICAL ANALYSIS

Descriptive analyses of basic demographic information and prevalence of item endorsement were conducted using Stata 14.0.⁴³ Differences in these variables both between country and within country by sex and community context were calculated using chi-square tests for categorical variables and t-tests for continuous variables, setting statistical significance at $p < .001$ to account for multiple comparisons. This exploratory analysis of behavior prevalence was used to ensure all behavior items had enough variability to be included in the analysis and to aid in interpretation of latent classes.

Latent class analyses were conducted using Mplus 7.3.⁴⁴ Measurement invariance of the 9 items was assessed by country, and then by sex and community context within country, using multigroup alignment optimization.⁴⁵ This approach estimates a model that fits as well as a configural model by allowing factor means and variances (and loadings and item intercepts) to be set at values that minimize the total amount of non-invariance using a simplicity function.⁴⁵ Models resulting from this approach have been shown to agree with models estimated using a

traditional confirmatory factor analysis approach in which the initial constrained model is adjusted using modification indices.⁴⁵

Model selection requires evaluating comparative fit of multiple models differing in the number of classes. Class enumeration was conducted prior to including covariates.⁴⁶ We fit a series of 1-5 class LCA models in each sample based on the nine binary behavior items, using robust standard errors to account for non-independence of observations due to clustered sampling. Unconditional models were estimated using Full Information Maximum Likelihood (FIML) to account for missing data in indicators. Model selection involved consideration of prior findings,^{23,28} model fit indices including Akaike's Information Criterion (AIC),⁴⁷ Bayesian Information Criterion (BIC),⁴⁸ sample-size adjusted BIC (SSA BIC),⁴⁹ and the Lo-Mendell-Rubin adjusted likelihood ratio test (LMR).⁵⁰ The model with the lowest AIC, BIC, and SSA BIC is preferred. The LMR compares the estimated model against a model with $k-1$ classes, with a low p-value rejecting the $k-1$ class model in favor of the larger model.⁵¹ The BIC was prioritized as it has been shown to perform consistently well across different conditions in simulation studies.⁵¹ Models were further evaluated for goodness of fit using entropy values, bivariate residuals, and modification indices. Entropy values ranging from 0-1 quantify the level of classification uncertainty, with higher values representing better discrimination of class membership for individuals. Bivariate distributions were used to assess conditional independence following the approach outlined by Asparouhov and Muthen.⁵²

We then used multinomial logistic regression to evaluate sex and community context as predictors of class membership. Because class enumeration produced models with different numbers of classes across the countries, we conducted all analyses separately by country. Sex and community context were added to the model sequentially using the 1-step method and assessing changes in model fit at each step. Due to minimal missingness (<1%), regression on covariates was conducted using listwise deletion. Possible presence of direct effects between the covariate and an indicator are indicated by substantial shifting of class probabilities with addition of a covariate.⁴⁶ When class shifting was observed, direct effects were fixed to zero and modification indices examined for evidence of a direct effect; if evident, this was statistically tested by regressing the indicator on the covariate and evaluating the statistical significance of the association at $p < .05$.⁵³ Final model fit was evaluated by examining changes in class probabilities, model fit indices, entropy, and bivariate residuals.

To assess construct validity of the latent class structures, we examined the relationship between class membership and caregiver report of bullying exposure using the Bolck, Croon, and Hagenaars (BCH) auxiliary function⁵⁴ in Mplus after sex and community context were included. This three-step approach compares the mean of the auxiliary variable across latent classes by treating the classes as multiple groups weighted according to the level of measurement error, thereby avoiding a situation in which inclusion of the auxiliary variable influences the measurement model. This approach has been shown to outperform similar

approaches, particularly when unequal variance of the auxiliary variable is assumed.⁵⁴

5.4. RESULTS

5.4.1. SAMPLE CHARACTERISTICS

Sample demographics are reported in Table 5.1. Age and sex distribution were similar across the four samples, while community context ranged from largely urban (Peru) to predominantly rural (Vietnam). The percentage of caregivers who reported their child had ever been bullied was 8.7% in Ethiopia, 17.6% in India, 20.5% in Peru, and 11.0% in Vietnam, while the percentage of youth who reported experiencing at least one of the nine victimizing behaviors was 51.1%, 79.1%, 93.9%, and 67.1%, respectively.

Table 5.1. Sample demographics by country.

	Ethiopia <i>(n=971)</i>	India <i>(n=967)</i>	Peru <i>(n=638)</i>	Vietnam <i>(n=960)</i>	p-value ^a
Age in Years, <i>mean</i> (SD)	15.0 (0.3)	15.0 (0.3)	14.9 (0.3)	15.1 (0.3)	<.001
% Male (vs. female)	50.9	49.3	52.7	49.4	.523
% Urban (vs. rural)	41.5	24.5	77.9	19.7	<.001
% Reporting any victimization	51.1	79.1	93.9	67.1	<.001
% Bullied by caregiver report ^b					
No	89.8	78.0	77.3	87.4	<.001
Yes	8.7	17.6	20.5	11.0	

^aTests for global differences using chi-square for categorical and ANOVA for continuous variables.

^bBoth response options reported due to missing data

Prevalence of each behavior by country ranged from a low of 6.9% in Ethiopia (for *hurt other*) to a high of 72.5% in Peru (for *names/swear*). With the exception of the lowest Ethiopian item, no item was experienced by less than 10% of youth. A breakdown of caregiver-reported victimization, youth self-reported victimization, and individual victimization behaviors by sex and community context is reported in Table 5.2.

Table 5.2. Forms of victimization experienced by sex and community context.

	Ethiopia		India		Peru		Vietnam	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
	(n=477)	(n=494)	(n=490)	(n=477)	(n=302)	(n=336)	(n=486)	(n=474)
	%	%	%	%	%	%	%	%
Caregiver-report	6.3	11.3	11.7*	25.5*	19.2	22.6	7.8*	14.7*
Self-report	46.8	55.3	78.0	80.3	94.0	93.8	69.1	65.0
<i>Hit/beat</i>	7.3*	17.8*	22.9*	40.3*	12.9	20.3	8.3*	16.5*
<i>Hurt (other)</i>	3.4*	10.3*	22.3*	33.2*	23.3	30.1	7.4	13.1
<i>Names / swear</i>	15.7	19.2	22.1*	41.5*	66.3*	78.0*	17.5	20.0
<i>Made fun of</i>	14.7	21.1	23.7	31.0	42.5	52.3	38.0	41.9
<i>Friend trouble</i>	22.6	22.1	34.0	32.3	54.9	48.5	32.7	26.3
<i>Refused to talk</i>	15.7	17.6	33.3	29.8	50.8*	35.6*	13.0	13.4
<i>Theft</i>	20.1	21.3	33.3*	48.6*	67.7*	52.0*	23.7	18.2
<i>Prop. damage</i>	9.4	11.1	23.1*	33.8*	39.3	38.5	16.3	14.1
<i>Staring</i>	12.6	16.8	22.2	15.1	49.3*	35.0*	40.9	32.9

*Indicates significant difference in prevalence by demographic variable within country at $p \leq 0.001$.

Table 5.2. Forms of victimization experienced by sex and community context (continued).

	Ethiopia		India		Peru		Vietnam	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
	(n=568)	(n=403)	(n=725)	(n=237)	(n=141)	(n=497)	(n=771)	(n=189)
	%	%	%	%	%	%	%	%
Caregiver-report	8.2	9.6	18.1	18.3	13.0	23.3	9.3*	19.1*
Self-report	43.5*	61.8*	79.7	77.2	91.5	94.6	67.4	65.6
<i>Hit/beat</i>	10.4	15.9	35.2*	19.9*	20.3	15.9	13.1	9.0
<i>Hurt (other)</i>	5.6	8.7	31.3*	17.3*	32.6	25.3	10.8	7.9
<i>Names / swear</i>	15.9	19.9	34.3	24.1	63.5	75.0	19.0	18.0
<i>Made fun of</i>	17.3	18.9	27.5	27.0	38.0	50.3	40.6	37.0
<i>Friend trouble</i>	18.2*	28.3*	32.4	35.6	40.0	54.8	30.0	28.0
<i>Refused to talk</i>	16.0	17.6	32.1	29.1	34.1	45.3	14.3	9.0
<i>Theft</i>	15.0*	28.8*	40.0	43.5	53.7	61.0	20.3	23.8
<i>Prop. damage</i>	9.5	11.4	28.0	29.5	37.0	39.3	16.3	10.6
<i>Staring</i>	12.3	18.1	20.0	15.2	37.8	42.9	36.7	38.1

*Indicates significant difference in prevalence by demographic variable within country at $p \leq 0.001$.

5.4.2. MULTIGROUP ALIGNMENT

Preliminary evaluation of the nine binary items demonstrated no significant differences in factor loadings either across the four samples or across levels of covariates within a country, suggesting that the items shared a similar relationship to the latent construct across groups.⁵⁵ Some item thresholds did differ across groups; higher thresholds suggest lower prevalence in one country than the others relative to the general prevalence of other items. The threshold for *hit/beat* was higher in Peru than the other samples, while the threshold for *hurt-other* was higher

for Ethiopia. *Names/swear* had a lower threshold in Peru. In Vietnam, *make fun* and *theft* had lower and higher thresholds, respectively. The threshold for *staring* was higher in India and lower in Vietnam than the other samples. Within samples, the threshold for *refuse to talk* was higher for boys than girls in both Peru and India, and the threshold for *staring* was higher for boys in all samples except Ethiopia. *Theft* also had a higher threshold for boys than girls in Peru. Only one item showed non-invariance in thresholds by community context: the threshold for *hurt-other* was higher for urban than rural youth in Peru.

5.4.3. MODEL SELECTION

Model fit indices used for initial model selection are reported in Table 3. The best fitting models were a 2-class model in Peru, 3-class models in Ethiopia and Vietnam and a 4-class model in India. In Ethiopia, addition of the covariates resulted in substantial shifting of class probabilities such that 20% of the sample moved from the largest class (with the lowest item-response probabilities) to the other two classes, resulting in a downward shift of the item-response probabilities of those two classes; however, no significant direct effects of covariates on indicators were found in this conditional model. In Peru, the BICs for the unconditional 2- and 3-class models were quite similar. Because previous LCAs have produced at least 3 classes^{23,28} and it is possible for the best fitting model to change with the inclusion of covariates, we re-compared fit for these models after inclusion of covariates. Fit indices for the conditional models still favored the 2-class model and substantial class-shifting in the 3-class model suggested the additional class was not stable, so we retained the 2-class model.

Table 5.3. Latent class analysis fit indices by sample.

No. of Classes	AIC	BIC	SSA BIC	LMR	Entropy
<i>Ethiopia (n=971)</i>					
1	7410.100	7454.005	7425.421	--	--
2	6384.236	6476.924	6416.580	<.001	.830
3	6316.033	6457.505	6365.401	.4776	.832
4	6282.045	6472.299	6348.435	.4200	.727
5	6261.954	6500.992	6345.368	.5922	.762
<i>India (n=967)</i>					
1	10525.423	10569.291	10540.707	--	--
2	9536.653	9629.263	9568.919	.0003	.762
3	9431.543	9572.895	9480.791	.2091	.737
4	9354.770	9544.864	9421.000	.4324	.734
5	9308.734	9547.569	9391.946	.4676	.779
<i>Peru (n=638)</i>					
1	7156.907	7197.032	7168.457	--	--
2	6587.432	6672.140	6611.817	<.001	.711
3	6549.654	6678.946	6586.876	.4310	.703
4	6530.798	6704.674	6580.852	.7025	.763
5	6519.931	6738.390	6582.818	.5121	.775
<i>Vietnam (n=960)</i>					
1	8551.562	8595.365	8566.781	--	--
2	7577.276	7669.748	7609.404	<.001	.766
3	7437.553	7578.694	7486.591	.0023	.712
4	7408.123	7597.933	7474.070	.4861	.758
5	7407.371	7645.850	7490.228	.5300	.805

Fit indices for model selection are reported prior to inclusion of covariates. Indices with a “—” are n/a for the 1-model class.

In the 2-class Peru model and both the India and Vietnam models there was minimal shifting (i.e. class probabilities shifted by an average of 1% or less with no meaningful changes to item-response probabilities), demonstrating the stability of these models.

5.4.4. CLASS DESCRIPTIONS

Item-response probabilities for the conditional models are illustrated in Figure 1. For simplicity, we followed a similar naming structure to that reported by Nylund and colleagues.²³ With the exception of Peru, all samples had a relatively similar “not victimized” (NV) exposure class that included nearly half the youth (Ethiopia, 48.9%; India, 50.8%; Vietnam, 44.9%). In Ethiopia, the remaining two groups were distinguished by severity: a large “sometimes victimized” (SV) class (38.9%) with low to moderate probability of experiencing each behavior, and a smaller “highly victimized” (HV) class (12.3%) with moderate to high probability of experiencing each behavior. Probability patterns for the SV and HV classes were relatively similar, although physical victimization and property damage tended to concentrate in the HV class as indicated by the wider difference in item-response probabilities for these experiences between the two classes.

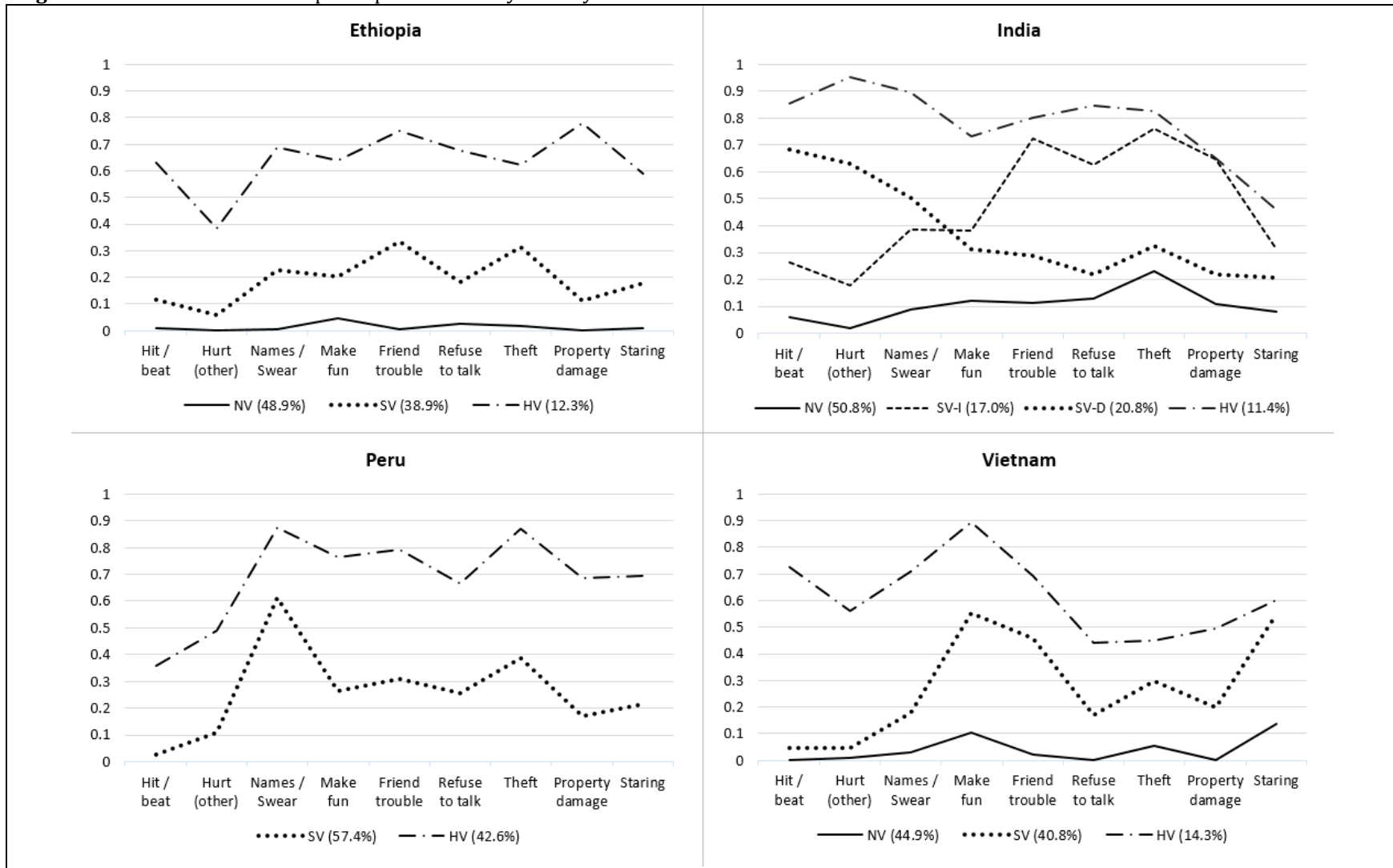
In addition to the NV class, three discrete patterns of victimization exposure emerged in India. A fifth of the sample (20.8%) comprised a class we called “sometimes victimized - direct” (SV-D), which was characterized by high probability of reporting physical victimization and name calling. The next class made up 17% of the sample and had lower probability of physical and verbal victimization, but higher probability of relational and property victimization; we called this the

“sometimes victimized - indirect” (SV-I) victimization class. The final class was a HV class, which included 11.4% of youth and had the highest probabilities for experiencing all behaviors, although the differences between the HV and SV-I groups for property victimization appeared to be quite small.

Similar to Ethiopia, classes in the Peru sample represented varying degrees of severity, with parallel patterns of item-response probabilities in the groups. However, the NV class did not emerge in Peru; subsequently, a larger proportion of youth (42.6%) were included in the HV class, while the remaining 57.4% of youth made up a SV exposure class. The SV class was marked by a high probability of experiencing verbal abuse but very low probability of any physical victimization.

In the Vietnam sample, differences in item-response probabilities between classes were not as uniform as in either Ethiopia or Peru. Rather, we observed a large class (40.8%) with moderate probabilities of exposure characterized by a blend of verbal, relational, and staring behaviors with very low physical victimization. This is contrasted with the smaller (14.3%), most highly victimized class characterized by high probability of all physical and verbal items as well as getting into trouble with one’s friends, but only moderate probability of all other behaviors. For consistency we refer to these two classes as SV and HV, respectively, but note that these terms do not necessarily indicate the same pattern of behaviors across the samples. Indeed, in Vietnam data suggest severity is not the key class feature.

Figure 5.1. Conditional item response probabilities by country.



NV=not victimized; SV=sometimes victimized; HV=highly victimized; SV-I=indirectly victimized; SV-D=directly victimized

5.4.5. PREDICTORS OF CLASS MEMBERSHIP

Complete results of the multinomial logistic regressions are reported in table 4. In Ethiopia, we observe a dose-response pattern in which, compared to the NV class, boys were increasingly more likely than girls to be in the higher victimization classes, although this difference was only statistically significant for the HV (OR=2.23, $p=.036$). This is in contrast to community context, where the trend was such that compared to the NV class, urban youth were at similarly elevated likelihood of being in the SV (OR=2.67, $p=.008$) and HV classes (OR=2.27, $p=.052$).

In India, compared to the NV class there were no significant sex differences for being in either the SV-D (OR=1.29, $p=.560$) or SV-I (OR=0.61, $p=.305$) class, nor was the sex difference between the SV-D and SV-I class significant (OR=2.11, $p=.191$). There was also a strong and significant pattern of higher odds for boys than girls of being in the HV class relative to the SV-I (OR=10.08, $p<.001$), SV-D (OR=4.77, $p=.025$), and NV (OR=6.16, $p=.004$) classes. For community context, comparisons showed decreased odds for urban vs. rural youth in the SV-D class relative to both the NV class (OR=0.17, $p=.003$) and the SV-I class (OR=0.14, $p<.001$), with similar but not significant trends for the urban vs. rural youth in the HV compared to both the NV and SV-I classes. To the contrary, urban youth were no less likely to be in the SV-I class than rural youth (OR=1.25, $p=.501$).

In Peru, we treated the SV class as the reference group and found no significant sex differences between groups (OR=0.81, $p=.363$), although urban youth were more likely than rural youth to be in the HV class (OR=1.56, $p=.025$).

In Vietnam, compared to the NV class boys were less likely than girls to be in the SV class (OR=.67, $p=.016$). Additionally, compared to the SV class boys were more likely than girls to be in the HV class (OR=2.36, $p=.012$), and urban youth were less likely than rural youth to be in the HV class (OR=.54, $p=.022$).

Table 5.4. Relative odds of class membership by sex and community context.

Class vs. Reference Class	<u>Male (vs. Female)</u>			<u>Urban (vs. Rural)</u>		
	β	SE	OR	β	SE	OR
Ethiopia						
Sometimes victimized vs. Not victimized	0.198	0.270	1.22	0.981**	0.368	2.67
Highly victimized vs. Not victimized	0.803*	0.382	2.23	0.818	0.422	2.27
Highly victimized vs. Sometimes victimized	0.605	0.463	1.83	-0.163	0.323	0.54
India						
Sometimes - Indirect vs. Not victimized	-0.492	0.480	0.61	0.224	0.332	1.25
Sometimes - Direct vs. Not victimized	0.256	0.438	1.29	-1.763**	0.603	0.17
Highly victimized vs. Not victimized	1.819**	0.629	6.16	-0.811	0.689	0.45
Sometimes - Direct vs. Sometimes - Indirect	0.748	0.572	2.11	-1.987**	0.510	0.14
Highly victimized vs. Sometimes - Direct	1.563*	0.699	4.77	0.953	0.634	2.59
Highly victimized vs. Sometimes - Indirect	2.311**	0.654	10.08	-1.034	0.542	0.36
Peru						
Highly victimized vs. Sometimes victimized	-0.207	0.228	0.81	0.445*	0.199	1.56
Vietnam						
Sometimes Victimized vs. Not victimized	-0.406*	0.169	0.67	-0.015	0.226	0.99
Highly Victimized vs. Not victimized	0.450	0.278	1.57	-0.639	0.420	0.53
Highly Victimized vs. Sometimes Victimized	0.856*	0.339	2.36	-0.623*	0.272	0.54

Notes: Class listed 2nd is the reference class. Sex: female=0, male=1; Community context: rural=0, urban=1

* $p<.05$; ** $p<.01$

5.4.6. LATENT CLASS VALIDATION

Probability of the caregiver reporting his/her child had ever been bullied by class is reported in Table 5. Although overall chi-square tests were modest (ranging from $p<.001$ in India to $p=.1$ in Peru), these probabilities followed the expected pattern of greater reporting in the higher victimization classes in all countries, supporting validity of the latent class structures. In Ethiopia, probability was significantly higher in the HV class compared to both the NV and SV classes, which were not significantly different from one another. In India, caregiver report was significantly higher in all victimization classes relative to the NV class. No significant difference was observed between the SV and HV classes in Peru, although the trend was in the expected direction (.24 vs. .19, $p=.10$). In Vietnam, probability of caregiver report was significantly higher in the HV class compared to both the NV and SV classes, which were not significantly different from one another.

5.5. DISCUSSION

The aim of the present study was to empirically identify unique patterns of peer-victimizing behaviors experienced by youth in each of the four LMIC settings, to examine sex and community context as predictors of class membership, and to validate classes against caregiver reports of youth victimization. Below, we discuss key findings and implications for each of these aims.

Table 5.5. Caregiver report of youth bullying victimization by class.

Latent Class	Caregiver report of youth victimization		
	Probability	SE	χ^2 p -value
<i>Ethiopia</i>			
Not victimized	0.063 ^a	0.014	.004
Sometimes victimized	0.080 ^a	0.021	
Highly victimized	0.212	0.046	
<i>India</i>			
Not victimized	0.099	0.011	<.001
Sometimes Victimized - Indirect	0.191 ^a	0.028	
Sometimes Victimized - Direct	0.291 ^{ab}	0.043	
Highly victimized	0.363 ^b	0.048	
<i>Peru</i>			
Sometimes victimized	0.189 ^a	0.025	.102
Highly victimized	0.238 ^a	0.020	
<i>Vietnam</i>			
Not victimized	0.112 ^a	0.020	.091
Sometimes victimized	0.092 ^a	0.017	
Highly victimized	0.171	0.036	

Superscripts denote values that are *not* significantly different at $p=.05$

5.5.1. CLASS ENUMERATION AND DESCRIPTIONS

Using the same nine behaviors, we found that the data supported models with different numbers of classes by country, and that countries differed in the extent to which the identified classes were characterized by severity or form. With the exception of the two mid-level classes in India – which somewhat approximated the “direct” and “indirect” victimization subtypes often discussed in the literature –

we did not find strong support for a variable-based approach emphasizing unique exposure to a particular subtype. In Vietnam, where the sometimes victimized class did appear to feature some behaviors over others, the more prominent behaviors included a blend of behaviors from verbal, relational, and intimidation forms that would not be grouped together in typical researcher-defined subtype approaches. Likewise, aside from India, physical victimization appeared to be rarely experienced in isolation; rather, we observed a trend of physical victimization being concentrated in the highest exposure groups, suggesting that physical acts may be an indicator of more severe victimization exposure. These are all potentially meaningful patterns of victimization that are missed when using either a cut-off score or variable-driven subtype approach.

The extent to which these differences in patterns are meaningful at a population level or are supported by qualitative work within these populations is a promising avenue for future research. Already, ethnographic research in Vietnam provides support for the meaningful clustering of the behaviors in the sometimes victimized class. In his research on bullying in two schools in Hanoi, Horton reports that Vietnamese youth describe bullying as the use of various tactics to coerce the victim into doing something he/she would otherwise not do; aggressors will first “ask” the victim to do these activities, and will resort to more direct forms of aggression if the victimized youth refuses their requests.⁵⁶ The use of a blend of verbal and relational aggression with very little social exclusion would fit well within this framework of intimidation. The use of eye contact would be a powerful intimidation technique in this pattern of behavior in Vietnam, where averted eyes

are a sign of respect and prolonged staring may be perceived as a challenge.^{57,58} Taken together, this pattern of behavior identified in the Vietnam sometimes victimized class bears similarity to the Japanese concept of bullying, *ijime*, which is described as occurring within a peer group rather than as a perpetrator or perpetrators aggressing against an individual outside their group.⁵⁹ This would make it difficult for parents, teachers, and other protective supports to recognize and intervene on these behaviors.

The emergence of a distinctly direct victimization class in India, and its absence in other places, may be explained by the notably higher prevalence of physical victimization in this context. As we discussed in our variable-driven analysis (Chapter 4), whereas physical acts were reported less frequently than other acts in Ethiopia, Peru, and Vietnam, in India these acts were reported with similar prevalence as other items. This is illustrated also in Table 2. Previous studies in India have also reported what while verbal bullying was the most common form, physical victimization was more prevalent than other forms of victimization.⁶⁰⁻⁶² A qualitative study using the photo stories among 33 youth age 12-15 in the Punjab also noted that a third of the stories focused on physical victimization.⁶³ Outside of bullying research, multiple aggression studies among youth have reported high rates of physical aggression. For example, two similar studies of aggression each among over 300 high school students both reported prevalence of past-month aggression between 65-70%.^{64,65} Among 258 rural adolescents age 15-19, total aggression was higher among older adolescents, but physical aggression was significantly higher among those age 15-17, highlighting the concentrated risk of

physical victimization during this period.⁶⁶ A study of 5476 young people age 15-26 found that a third of the sample reported fighting when angry; this study also reported higher aggression among the adolescents.⁶⁷ These findings have been accompanied by calls to action to address the high level of aggression among Indian youth and provide a reasonable explanation for the unique direct victimization class we found in the current research.

That we did not extract a class of not victimized youth in Peru is somewhat surprising considering that previous LCA findings have typically identified at least three classes,^{23,28} but is consistent with the observation in the data that a 94% of youth report at least one victimizing experience. Further, the two class model was consistently supported by fit indices (Table 3). It is likely that there does exist a not victimized class in Peru, but that this class would be quite small and, due to the lower sample size and limited power, we were unable to extract it. However, the 42.6% of youth falling in the highly victimized class maps onto previous estimates that 46% of boys and 48% of girls are bullied in Peru.⁶⁸

Although we observed unique features across the samples, we also note some similarities. For example, while the total number of youth reporting *any* victimization exposure ranged from just over half to nearly four out of five across Ethiopia, India, and Vietnam, the proportion of youth falling in the not victimized and highly victimized classes appeared to be quite similar across these samples. This suggests that whereas previous research has indicated a wide range of bullying prevalence estimates across these populations (from 17% among youth in Addis Ababa, Ethiopia to over 60% in India),^{60-62,69-71} the proportion of youth at the lowest

and highest risk in these settings may be more similar than previously thought. As cross-national studies using a single question to assess bullying victimization have previously reported prevalence estimates ranging from 7-70% across settings,¹ the current findings demonstrate that relevant details regarding patterns and variations in severity are lost using that single item approach. Future research using a person-centered approach holds promise for improving our understanding of factors contributing to these widely ranging estimates.

5.5.2. SEX DIFFERENCES

Across all settings except for Peru (where no significant sex differences were observed), boys were more likely than girls to be in classes characterized by higher severity of victimization; the more severe classes also tended to be the classes in which most of the physical victimization was concentrated. However, boys and girls were fairly equally represented in the not victimized classes, suggesting sex differences in form or frequency rather than overall exposure. Previous research from LMIC suggests that when sex differences in exposure do occur, they tend to identify more victimization among boys.¹ Given the current findings, it is possible that some of those sex differences identified elsewhere are capturing severity or frequency but missing unique patterns of victimization that may be more common among girls, particularly if there are meaningful differences in terms used or cultural differences in what constitutes bullying. For example, research has documented a high rate (estimates ranging from 32-68% in selected studies) of sexual violence or coercion among female students in Ethiopia;⁷²⁻⁷⁴ it is unclear

whether questions assessing bullying victimization would adequately capture this type of victimization.

The current findings align with a large body of literature that suggests boys are at higher risk than girls for physical victimization.⁷⁵ But looking at the distinctly direct (SV-D) and indirect (SV-I) classes in India, which is where existing research may have suggested we see the strongest sex differences given that those classes were distinguished by form, the observed difference was not statistically significant. Instead what we see is more nuanced: among Indian youth *with similar relational and property victimization* (items which had similar item-response probabilities in the SV-I and highly victimized groups), boys were more likely than girls to be in the highly victimized class. Literature on prevalence of aggression (rather than victimization) among Indian youth consistently reports higher overall aggression and higher physical aggression among boys.^{64–67} Our study did not assess the sex of the aggressor, but the more consistent reporting of physical aggression by boys paired with smaller sex differences in physical victimization would suggest that boys may be aggressing against girls, contradicting typical assumptions that boys bully other boys and girls bully other girls. This is supported by a previous analysis of adolescent exposure to violence (inclusive of peer and other violence) in India, reporting that boys were more likely to be perpetrators and girls more likely to be victims of violence.⁷⁶

The small and non-significant decreased odds for Indian boys to be in the SV-I relative to the not victimized class also aligns with previous findings that there is less meaningful sex difference in indirect victimization.⁷⁵ Even so, the overall trend,

paired with findings in Vietnam that girls were significantly more likely than boys to be in the sometimes victimized class with low physical victimization suggests that the extent to which sex predicts exposure to indirect victimization may be more greatly influenced by gender norms in a particular setting. For example, in addition to the similarities between the Vietnam SV class and the Japanese *ijime* discussed above, reports have also suggested victimization is more common among girls than boys in Japan.⁵⁹

5.5.3. COMMUNITY CONTEXT DIFFERENCES

We found different implications for community context across settings, such that in both Ethiopia and Peru urban environments appear to confer greater risk, while in India and Vietnam the findings are more nuanced but in general suggest the opposite association. These findings also demonstrate the strength of the person-centered approach compared to our previous variable-centered approach. We previously reported a similar but very weak association in Ethiopia that appeared to be driven by higher property victimization in urban settings; in the current study, we were able to quite clearly identify a group of victimized youth for which urbanicity confers significantly higher risk. As other available research in Ethiopia has focused primarily on urban settings rather than comparing urban vs. rural exposure,^{69,77} future research should explore this dynamic to understand what factors of the social context contribute to these differences with an eye toward improving protective resources in the urban environment. One possibility, which has previously been suggested in the context of Vietnam, is that poor and rural

youth in a largely agrarian context may have less free time and resources to socialize with other young people.⁷⁸

Current findings suggesting greater prevalence of victimization among urban youth in Peru is supported by qualitative research in the Young Lives study⁷⁹ as well as a greater body of literature on violence highlighting the role of rapid urbanization in Latin America.⁸⁰ In India, overall implication of current findings suggests higher risk of victimization for rural youth, which is contrary to prior research that generally suggests higher prevalence among urban youth.^{60–62,70} Most of the previous studies were limited to only a few schools, which may partially account for this. Additionally, a study of online victimization and cyberbullying undertaken by Microsoft in 25 countries found that at a prevalence of 53%, cyberbullying was more common in India than all but two other included countries.⁸¹ It is likely that cyberbullying is more common among urban youth with better access to technology; as cyberbullying was not explicitly assessed in the current study, it is difficult to know if these victimizing experiences would have been adequately captured in the existing questions. Methods aside, on closer examination our findings again suggest greater nuance in terms of who is at risk: whereas rural youth are more likely to be in classes involving direct victimization (SV-D, HV), there is no urban/rural difference for the class exposed to indirect victimization. Additionally, among youth who experience direct victimization, urban youth may be more likely to *also* experience indirect victimization. Although this association did not reach statistical significance, these findings merit further exploration as they would provide more context for the current findings and would contradict a simple

conclusion that bullying is concentrated in rural areas and would support tailoring of prevention initiatives to the context.

5.5.4. CAREGIVER IDENTIFICATION OF VICTIMIZATION

Caregiver report of youth bullying victimization followed expected trends of higher reporting in highly victimized classes than not victimized classes. Caregiver report for the sometimes victimized classes was more mixed, with no difference between the not victimized and sometimes victimized classes in Ethiopia and Vietnam, and no difference between the sometimes victimized and highly victimized in Peru. Given the lower item-response probabilities in the sometimes victimized class in Ethiopia (avg: 0.19), it is not surprising that caregiver report was lower; many of these youth may have reported only one or two experiences of victimization. In Vietnam, previous research has also documented lower parental recognition of bullying among girls than boys;⁷⁸ together with the previous discussion of the characteristics of this class, lower caregiver recognition of youth victimized in this way would be expected and should not be taken as a lack of support for class validity. And in Peru, where we did not identify a not victimized class, we would expect higher caregiver report in both victimized classes; this supports our designation of the lowest class as a sometimes victimized rather than not victimized class. Taken together, the associations between these classes and caregiver report were as expected, supporting construct validity of the latent classes.

5.5.5. LIMITATIONS

The strength of the LCA approach lies in moving beyond variable-based analysis to meaningfully model heterogeneity in response patterns and account for high correlations among different forms of victimization. However, because classes are unobserved and class enumeration is dependent on statistical power and researcher judgment, LCA is a useful exploratory tool but causal conclusions cannot be drawn.²⁶ An additional limitation is that the Young Lives study, from which the study data were drawn, is a study of general youth development not specifically focused on peer victimization, resulting in a high proportion of youth reporting no victimization experiences. This homogeneity may have also restricted class enumeration. Another limitation is that the Peru sample was smaller than the others, reducing statistical power for the analyses of that sample. Future work with a large, rich dataset of youth reporting involvement in bullying may elucidate additional patterns of victimization.

By stratifying our analysis, we allowed the models to provide the best fit to the data in each setting, but at the expense of being able to test model constraints and make direct comparisons across countries. While we used the same class names across samples for simplicity, the names reflect the relative position of classes within one sample rather than implying that classes sharing a name are actually the same. This also limits the conclusions that can be drawn about the relationships between covariates and classes, as constraining classes to be the same across samples may have impacted their relationships to covariates. Where we have drawn tentative comparisons – for example, when discussing differences in

caregiver reporting across sometimes victimized classes – we are to some extent comparing apples to oranges. However, the general trends we have observed provide useful avenues for future research and may inform relevant intervention programming.

As a cross-cultural study using secondary data, we focused on factors that could be measured across settings rather than an in-depth exploration of country-specific factors to enable better comparison to the existing body of literature. We used nine indicators of common victimizing behaviors that have been shown to perform well across diverse settings,³³⁻³⁸ and which we found to be consistently associated with one another in the four YL samples, but did not include unique forms of victimization specific to a particular context. Additionally, treating a multifaceted concept such as community context as a binary variable overlooks an abundance of variability.^{82,83} However, these initial findings provide support for future research using more refined measures.

5.5.6. CONCLUSIONS

This paper presents one of the first attempts to study bullying victimization using a person-centered approach in low-resource settings. We found that while data supported different numbers of classes across settings, some similarities in class proportions and class structure emerged. We did not find strong support for unique experiences of a particular form of victimization; rather, youth within high victimization classes were likely to experience multiple forms of victimization. Boys in Ethiopia and India were more likely than girls to be in the high victimization classes; this relationship was not observed in Peru and Vietnam. Urban youth

appeared to be at higher risk in Ethiopia and Peru, and lower risk in India and Vietnam. Caregiver report provided validation for class structures. These findings are exploratory, but suggest avenues for future person-centered research to improve the development of targeted intervention programs.

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CHAPTER 6: COMPARISON OF ADOLESCENT PSYCHOSOCIAL ADJUSTMENT ACROSS LATENT CLASSES OF PEER VICTIMIZATION IN FOUR LOW-RESOURCE SETTINGS

6.1. ABSTRACT

Bullying is common among school-aged youth globally, but research is sparse in low-resource settings. We aimed to assess whether bullying victimization was associated with psychosocial adjustment among adolescents in Ethiopia, India, Peru, and Vietnam. 3,536 youth in the Young Lives study reported past-year exposure to nine victimizing behaviors at age 15. These data were previously used to develop latent classes of victimization, which we treated as the exposure variable. Emotional difficulties, self-rated health, subjective wellbeing, and alcohol use were compared across classes. Victimization was strongly associated with higher emotional difficulties and alcohol use in all settings. In Ethiopia, Peru, and Vietnam, these associations followed a dose-response relationship; in India, any victimization was associated with elevated risk of emotional difficulties, while alcohol use was concentrated only in the highly victimized class. Highly victimized youth reported significantly lower self-rated health and subjective wellbeing in Peru and Vietnam, and lower subjective wellbeing in India. The consistent associations between victimization and poor psychosocial adjustment, even among classes characterized by lower severity and indirect aggression, highlight the need to recognize bullying as a serious public health issue in low-resource settings. Interventions to improve recognition of and intervention on multiple forms of victimization are needed.

6.2. INTRODUCTION

Bullying victimization is among the most common forms of aggression experienced by school-aged children.^{1,2} Most research examining this phenomenon has been concentrated in high income countries in Europe and North America, where intentional and repeated acts of direct and indirect aggression by peers are strongly and consistently associated with numerous concurrent negative psychosocial adjustment outcomes such as emotional, health, school, and social problems, somatic complaints and suicidal ideation.³⁻⁹ Longitudinal research has also demonstrated associations between youth bullying victimization and poorer mental and physical health, wellbeing, and social functioning over the lifespan.¹⁰⁻¹⁵

Although evidence suggests that roughly one in three children is a victim of peer aggression in both high income countries and low- and middle-income countries (LMIC) alike,¹⁶ we know less about the dynamics of these victimization experiences among the majority of the world's youth living in LMIC. Much of the research in these contexts has been based on data from the Global School-Based Student Health Survey (GSHS),¹⁷ which has shown consistent associations between bullying victimization and physical fighting, poor mental health, suicidality, substance use, risky sexual behavior, and truancy in countries where the GSHS has been conducted.¹⁸⁻³³

6.2.1. PATTERNS OF BULLYING VICTIMIZATION

Findings regarding bullying victimization from the GSHS study are based on a brief assessment method referred to as a *definition-based* assessment.³⁴ In this

approach youth are provided a description of what bullying is (eg: “Bullying occurs when a student or group of students say or do bad and unpleasant things to another student It is also bullying when a student is teased a lot in an unpleasant way or when a student is left out of things on purpose. It is not bullying when two students of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.”¹⁷) and are asked a single question regarding how frequently they have been bullied over the reporting period. This makes it unclear what behaviors are actually experienced across the different LMIC settings where there may be potentially meaningful language differences in the terms used,³⁵ limiting our ability to understand how different behaviors or patterns of exposure may be differently associated with poor health in different LMIC settings³⁶ and how factors such as culture and context may influence experiences and outcomes of victimization.³⁷⁻³⁹

In contrast to the above approach some researchers employ a *behavior-based* assessment,³⁴ using a standard scale to assess exposure to individual behaviors (eg: during the last 12 months, we want to know whether other young people...called you names; tried to get you into trouble with your friends; beat you up^{40,41}). Responses can then be used to classify youth into groups by severity levels or by specific sub-types of victimization (eg: physical, verbal) in typical variable-centered analyses. While this approach is often used in high-income countries and allows for greater examination of victimization experiences compared with the single item approach, it also has limitations in terms of utility for meaningful classification of groups of youth. Nylund and colleagues have reviewed these measurement

challenges in detail,⁴² highlighting the classification problems resulting from either an arbitrary or distribution-based cut-off score for examining severity, as well as a failure to account for high correlations between behaviors when examining victimization subtypes.

Increasingly, person-centered approaches such as latent class analysis (LCA) are being used to examine meaningful heterogeneity within populations for developmental research.^{43–45} Based on the assumption that an underlying latent variable accounts for responses to a set of observed, discrete indicators, LCA examines patterns of responses and classifies individuals into subgroups (latent classes) of individuals.⁴⁵ This allows for the use of LCA to examine typologies—in this case, groups of youth with similar *patterns* of victimization experiences that are explained by latent class membership.⁴⁶ Researchers using LCA to study bullying victimization have highlighted its flexibility in allowing class membership to be determined by a combination of severity and form characteristics, therefore accounting for experiencing multiple types of victimizing behavior.^{42,36}

In a longitudinal US study of over 2,000 urban middle schoolers, Nylund and colleagues identified three ordered latent classes that distinguished bullying victimization based on frequency (i.e.: “nonvictimized”, “sometimes victimized” and “victimized”) and found that these classes were better at predicting subsequent depressive symptoms than raw scores.⁴² Bradshaw and colleagues³⁶ subsequently used LCA to examine distinct *forms* of bullying victimization among over 17,000 US middle and high school students, and found that patterns of victimization varied by level of development and odds of class membership differed by child sex. They also

found that while victimization classes were associated with psychosocial adjustment problems, some of these associations differed by form of victimization. For example, comparing groups of middle school youth who experienced either verbal and physical victimization or verbal and relational victimization, both groups had similar internalizing problems but the former group manifested significantly more self-reported aggression than the latter group.³⁶ These studies demonstrate the heterogeneity in experiences of bullying victimization and illustrate how studying how these behaviors are experienced within groups of individuals can improve identification and subsequent interventions.

Following this approach, we previously used latent class analysis to empirically derive classes of victimization among 15-year old youth in four LMIC settings (Ethiopia, India, Peru, and Vietnam), and examined sex and community context (urban/rural) as predictors of class membership (Chapter 5). Contrary to the distinctions made by variable-driven classifications of victimization forms, we found that victimized youth were likely to experience multiple forms of victimizing behavior. The number and structure of classes varied across sites; the Ethiopian (3 class) and Peruvian (2 class) samples producing ordered classes characterized by severity, whereas the India (4 class) sample produced two unordered classes uniquely characterized by direct and indirect victimization, and the Vietnamese (3 class) sample had largely ordered classes but with form distinctions. There was some variation in the relationships between latent classes and the sex and urban/rural covariates by context: boys were more likely than girls to be in the highest victimization class in Ethiopia and India, but not in Peru and Vietnam, and

urban contexts were associated with higher victimization in Ethiopia and Peru and lower direct victimization in India. The purpose of the present study was to build on this earlier research to examine associations between victimization classes and select psychosocial adjustment outcomes in the four study settings.

6.2.2. VICTIMIZATION AND PSYCHOSOCIAL ADJUSTMENT IN THE STUDY SETTINGS

Research examining bullying victimization and psychosocial adjustment in these settings is scarce, and to our knowledge none has taken a person-centered approach. In Ethiopia, a 2008 report by Save the Children discussed absenteeism and emotional suffering associated with multiple types of violence (i.e. not only peer violence) against girls in schools.⁴⁷ Among 379 high school youth from 4 schools in Addis Ababa, 14% reported experiencing negative impacts of being bullied, including feeling bad or sad, feeling sick, or having difficulty learning.⁴⁸ In his ethnographic research on bullying in two schools in Northern Vietnam, Horton discussed the potential for a link between victimization and suicide.⁴⁹ Since his work was published, bullying has been identified as a risk factor for suicide among Vietnamese boys, but the same association was not observed for girls and there was no association between bullying and alcohol use for either sex.⁵⁰

In a study of 209 adolescents in Northern India, bullying victimization was associated with lower self-concept and higher risk of emotional problems, hyperactivity, and conduct problems compared to non-involved youth;⁵¹ this contrasts with a finding among 393 adolescents in Coimbatore in Southern India of no association between victimization and self-efficacy.⁵² In West Bengal, 104 youth attending an urban school reported both more victimization and more mental

health problems than 95 youth attending a rural school but no direct association was reported.⁵³ Two other Indian studies, each involving 500 younger children (age 8-14), have associated bullying victimization with physical complaints, sleep problems, and fear of going to school; associations with feelings of sadness and depression were also reported but the number of children reporting these complaints was too low for statistical comparison.^{54,55}

A series of findings among the Peruvian cohort included in the current study has shown victimization to be associated with poorer parent-assessed child health as well as adolescent risk behaviors and emotional difficulties.⁵⁶⁻⁵⁸ These studies also demonstrated that when considered independently, only some experiences of victimization were associated with risky behaviors and mental distress; for example, youth who reported other young people had tried to get them in trouble with their friends were consistently at higher risk of smoking, drinking, or sexual activity.^{56,57} However, these analyses did not also examine the impact of patterns of victimization experiences.

The above research suggests bullying victimization is likely to be associated with poor psychosocial adjustment in these settings. We aimed to expand on these findings by examining how different patterns of victimization experienced by youth may contribute to these negative outcomes. This analysis builds on LCA models developed previously. In selection of psychosocial outcomes, we included both negative and positive aspects of mental health, the latter being integral to overall mental well-being.⁵⁹⁻⁶¹

6.3. METHODS

6.3.1. SAMPLE

We used archived data collected in 2009 as part of the Young Lives study,⁶² a longitudinal cohort study taking place in four LMIC. In 2002 at the age of 8, approximately 50 children were randomly sampled from 20 sentinel sites per country and have been followed prospectively. Loss to follow up has been minimal (<5%) and relatively unbiased in terms of demographic characteristics.⁶³ Detailed information on the sampling and interview methods used by the Young Lives team has been published elsewhere ⁶⁴. In 2009 at age 15, youth were interviewed and completed a self-administered questionnaire that assessed adolescent psychosocial adjustment, risk issues, and exposure to bullying victimization. Excluding 65 youth who were followed up at age 15 but were missing responses to the questions on bullying victimization, cross-sectional data is available for 971 youth in Ethiopia, 967 in the Indian states of Andhra Pradesh and Telangana, 638 in Peru, and 960 in Vietnam. Of the 65 excluded youth, 41 (63%) were missing the entire self-administered questionnaire, including mental health and risk behavior data. Ethical approval for the Young Lives study was granted by the London School of Hygiene and Tropical Medicine;⁶⁵ approval for this secondary analysis was granted by the Institutional Review Board at the Johns Hopkins Bloomberg School of Public Health.

6.3.2. MEASURES

Peer victimization. Latent classes of peer victimization were previously derived using data on experiences of nine victimizing behaviors over the past year.

The behaviors were assessed using the self-administered *Social and Health Assessment Peer Victimization Scale*,^{40,41} which has been used as a measure of bullying exposure in multiple studies internationally.^{66–68,56,69,70} The questions addressed exposure to physical (punched, kicked, or beaten up; hurt physically in some other way), verbal (called names or sworn at; made fun of for some reason), relational (tried to cause trouble with the youth’s friends, refused to talk to youth), and property victimization (broke or damaged property; took something without permission or stole something), as well as intimidation/space invasion (made youth uncomfortable by staring). Power balance of the peer relationship was not assessed. The nine behaviors were dichotomized as “none” vs “any” exposure to each behavior to empirically derive classes of victimization separately by country. The class enumeration process resulted in a 2-class model in Peru, 3-class models in Ethiopia and Vietnam, and a 4-class model in India. Classes were conditioned on child sex and community context (urban/rural) and were validated against caregiver reports of whether their children had ever been bullied.

These latent classes serve as the bullying victimization exposure variable in the present analysis and are described in Table 6.1 with regard to class prevalence, item-response probability patterns, and demographic correlates. Briefly, the three Ethiopian classes were characterized by severity and ranged from *not victimized* to *sometimes victimized* and *highly victimized*. In India, we identified similar *not victimized* and *highly victimized* classes, but found two mid-level classes with distinct forms of victimization – a *direct* class characterized by physical and verbal aggression, and an *indirect* class characterized by relational and property

victimization. The Peruvian classes were also distinguished by severity but no *not victimized* class was identified, resulting in only *sometimes victimized* and *highly victimized* classes. In Vietnam, the three classes were distinguished by severity (*not victimized*, *sometimes victimized*, and *highly victimized*). The *sometimes victimized* class featured verbal, relational, and staring behaviors in conjunction with low physical victimization, while the smaller *highly victimized* class was characterized by high probability of physical and verbal victimization as well as getting into trouble with one's friends, but only moderate probability of all other experiences.

Mental distress. Mental distress in the past six months was assessed using the five-item Emotional Difficulties subscale of the *Strengths and Difficulties Questionnaire* (SDQ),⁷¹ in which youth report how true it is that they: 1) worry a lot; 2) get a lot of headaches, stomach aches, or sickness; 3) are often unhappy, downhearted, or tearful; 4) are nervous in new situations, and 5) have many fears or are easily scared. Responses of 0 “not true”, 1 “a little true”, or 2 “certainly true” produce a total emotional difficulties score of 0-10, with higher scores indicating more mental distress. This scale was included in the self-administered questionnaire to reduce response bias. The SDQ has been translated into nearly 100 languages and used extensively in international research, including previous research in all four country settings.⁷²⁻⁷⁴ Internal consistency was satisfactory with Cronbach alphas of .68, .71, .63, and .67 in Ethiopia, India, Peru, and Vietnam, respectively. Multigroup alignment optimization⁷⁵ identified no differences in factor loadings across groups, supporting the scale's utility for measuring the same latent variable across samples.

Table 6.1. Description of latent classes by country.

Country/Class	Size	Description of item-response probabilities (IRPs)	Correlates
<i>Ethiopia</i>			
1. Not victimized	48.9%	Very low IRPs ($<.1$)	REF
2. Sometimes victimized	38.9%	Low to moderate IRPs ($<.4$), very low probability ($\approx .1$) of physical victimization	Urban
3. Highly victimized	21.3%	Similar pattern as SV class but moderate to high IRPs ($\approx .4-.8$), physical victimization and property damage concentrated here	Male
<i>India</i>			
1. Not victimized	50.8%	Very low IRPs ($\approx .1$), slightly higher probability of theft ($\approx .2$)	REF
2. Indirect	17.0%	Lower probability of physical and verbal victimization (IRPs $<.04$), higher probability of relational and property victimization ($\approx .6-.8$)	--
3. Direct	20.8%	high probability of reporting physical victimization and name calling ($\approx .5-.7$), low probability of other behaviors ($\approx .2-.3$)	Rural
4. Highly victimized	11.4%	highest probabilities for experiencing all behaviors ($\approx .5-.9$)	Male

Table 6.1. Description of latent classes by country (continued).

Country/Class	Size	Description of item-response probabilities (IRPs)	Correlates
<i>Peru</i>			
1. Sometimes victimized	57.4%	Moderate to high probability of experiencing verbal abuse (IRPs $\approx .3-.6$), low to moderate probability of other behaviors ($< .4$), very low probability of any physical victimization ($< .1$)	REF
2. Highly victimized	42.6%	Similar IRP pattern as SV class but higher IRPs ($\approx .4-.9$), physical victimization concentrated here	Urban
<i>Vietnam</i>			
1. Not victimized	44.9%	Very low IRPs ($< .1$), slightly higher probability of staring ($> .1$)	REF
2. Sometimes victimized	40.8%	Moderate IRPs ($\approx .4-.6$) for being made fun of, having trouble with friends, low probability of social exclusion or property damage ($\approx .2-.3$), very low physical victimization ($< .1$)	Female
3. Highly victimized	14.3%	high probability of all physical and verbal items as well as getting into trouble with one's friends ($\approx .6-.9$), moderate probability of all other behaviors ($\approx .4-.6$)	--

Self-perceived health was assessed using a global health question asking youth to rate their health in general as: 1) very poor, 2) poor, 3) average, 4) good, or 5) very good; higher scores indicated better perceptions of health. Self-ratings of health are considered a valid measure of overall health and are predictive of morbidity and mortality across socioeconomic groups in high and low-resource settings,⁷⁶⁻⁸⁰ and this specific question is commonly used to assess positive health in cross-national research.⁸¹ Among adolescents, self-perceived health has been shown to be moderately stable over time.⁸² Self-perceived health is conceptualized as incorporating physical, social, emotional, and mental aspects of wellbeing⁸²⁻⁸⁵ and is distinct from measures of wellbeing such as quality of life or life satisfaction.⁸⁶⁻⁸⁸ Poor peer relationships have been shown to increase odds of poor self-rated health both cross-sectionally and longitudinally.⁸⁹⁻⁹⁵ This item was included in the interviewer-administered questionnaire, so is not as protected from possible response bias as the mental distress, victimization, and risk questions.

Subjective wellbeing. Subjective wellbeing is defined as “good mental states, including all of the various evaluations, positive and negative, that people make of their lives, and the affective reactions of people to their experiences.” (p. 29).⁸⁸ Positive aspects of health and wellbeing are a key component of mental health⁵⁹ and are distinct from symptoms and disorders.^{60,61} The Young Lives study assessed subjective wellbeing using Cantril’s ladder.⁹⁶ Adolescents were shown a picture of a ladder and presented with the question, “There are nine steps on this ladder. Suppose we say that the ninth step, at the very top, represents the best possible life for you and the bottom represents the worst possible life for you. Where on the

ladder do you feel you personally stand at the present time?” Responses range from 1-9, with higher scores indicating greater subjective wellbeing. Although subjective wellbeing is a multi-faceted construct for which single-item measures have limitations, research suggests adequate validity and reliability of this approach.⁹⁷ A version of the ladder has been used in the Gallup World Poll in more than 150 countries⁹⁸ and it is included in the OECD Guidelines on Measuring Subjective Wellbeing.⁸⁸ High subjective wellbeing is associated with adaptive functioning and fewer problem behaviors in adolescence and adulthood.⁹⁹⁻¹⁰¹ Poor peer relations and peer victimization have been associated with lower subjective wellbeing.¹⁰²⁻¹⁰⁴ This question was included in the interviewer-administered questionnaire.

Alcohol use. Alcohol use is a risky behavior that often begins in adolescence and is associated with other risky behavior, unintentional injuries, and long-term health, social, and economic problems.¹⁰⁵ Research in the four study settings demonstrate similar relationships between alcohol and health risk behaviors, and suggests that early initiation of alcohol use is predictive of later substance use problems in these settings.¹⁰⁶⁻¹⁰⁹ In this study, youth reported frequency of alcohol use in response to the question, “How often do you usually drink alcohol?” Responses were dichotomized as “no” vs. “any” reported use for this analysis. This question was included in the self-administered questionnaire.

6.3.3. STATISTICAL ANALYSIS

Descriptive analyses were conducted using Stata 14.0.¹¹⁰ Differences in psychosocial adjustment variables by sex and urban/rural status within each sample were calculated using chi-square tests for categorical variables and t-tests

for continuous variables; a conservative $\alpha < .001$ was used to indicate statistically significant differences due to multiple testing. Polychoric correlations between the four psychosocial adjustment variables were calculated by country to determine the appropriateness of treating these items as separate outcomes measuring unique aspects of mental distress, health, and wellbeing; low correlations would support their use as separate outcomes.

All subsequent analyses were conducted using Mplus 7.1.¹¹¹ We fit latent class models that were previously derived from these samples, treating the nine binary victimization items as latent class indicators and including sex and urban/rural status using a 1-step approach. We then examined associations between class membership and each psychosocial adjustment outcome separately using the Bolck, Croon, and Hagnaars (BCH) auxiliary function in MPlus.¹¹² In LCA, respondents can be assigned to their most likely class using posterior probabilities; however, because the classes are latent and an individual's true class is unknown, measurement error must be accounted for when making these assignments. The BCH method uses an automated 3-step approach in which the latent classes are treated as multiple groups that are weighted according to the level of measurement error. This approach allows for means of auxiliary variables to be compared across classes while accounting for measurement error and without influencing the latent class structure. Means are compared using chi-square tests of statistical significance.¹¹²

Missing data. Latent class models were estimated using Full Information Maximum Likelihood (FIML) to account for missing data in indicators, which peaked

at 0.1% in Ethiopia, 0.2% in India, 3.0% in Peru, and 0.6% in Vietnam. Data for emotional difficulties, self-reported health, subjective wellbeing, and alcohol use were missing for 15, 5, 3, and 7 youth, respectively. Due to this minimal missingness (<1%), listwise deletion was used for the analysis of these outcomes.

6.4. RESULTS

6.4.1. SAMPLE CHARACTERISTICS

Sample demographics are reported in Table 6.2 and comprise the same samples used in the original LCA. Age and sex distribution were similar across the four samples, community context ranged from largely urban (Peru) to predominantly rural (Vietnam). Country means on the psychosocial adjustment outcomes suggested the study youth represented, on average, a relatively healthy population with low to moderate reporting of emotional difficulties (means ranging from 2.84 to 4.31), average to good self-reported health (3.50 to 4.04), and moderate subjective wellbeing (4.76 to 6.13). There was very low reporting of any alcohol use (6.6%) in the Indian sample compared to the other three samples (28.1-34.5%).

Significant within-country differences (at $p < .001$) in means of psychosocial adjustment variables by sex and community context are reported below. Sex was independent of urbanicity in all settings. In Ethiopia, no significant differences were observed by sex, but urban youth reported significantly lower subjective wellbeing (4.44 vs. 5.01) and significantly less alcohol use (25.1% vs. 39.3%) than rural youth. In India, boys reported fewer emotional difficulties (2.80 vs. 4.29), higher self-rated

health (4.13 vs. 3.89), and more alcohol use (10.3% vs. 3.1%) than girls, while urban youth reported fewer emotional difficulties (3.02 vs. 3.72), higher self-rated health (4.14 vs. 3.97), and higher subjective wellbeing (5.33 vs 4.57) than rural youth. In Peru, the only significant difference was lower reporting of emotional difficulties among boys (3.80 vs. 4.86) compared with girls. In Vietnam, boys reported fewer emotional difficulties (3.26 vs. 4.00) and more alcohol use (36.9 vs. 19.6) than girls; no differences were observed between rural and urban Vietnamese youth.

Table 6.2. Sample demographics by country.

	Ethiopia	India	Peru	Vietnam	p-value^a
	<i>(n= 971)</i>	<i>(n=967)</i>	<i>(n=638)</i>	<i>(n=960)</i>	
Age in Years, <i>mean</i> (SD)	15.0 (0.3)	15.0 (0.3)	14.9 (0.3)	15.1 (0.3)	<.001
% Male (vs. female)	50.9	49.3	52.7	49.4	.523
% Urban (vs. rural)	41.5	24.5	77.9	19.7	<.001
% Reporting any victimization	51.1	79.1	93.9	67.1	<.001
Emotional Difficulties, <i>mean</i> (SD)	2.84 (2.48)	3.56 (2.37)	4.31 (2.34)	3.64 (2.16)	<.001
Self-rated Health, <i>mean</i> (SD)	4.04 (0.86)	4.01 (0.60)	3.75 (0.67)	3.50 (0.69)	<.001
Subjective Wellbeing, <i>mean</i> (SD)	4.77 (1.73)	4.76 (1.82)	6.13 (1.69)	5.30 (1.61)	<.001
% reporting alcohol use	33.4	6.6	34.5	28.1	<.001

^aTests for global differences using chi-square for categorical and ANOVA for continuous variables.

6.4.2. PSYCHOSOCIAL ADJUSTMENT OUTCOMES

Table 6.3 reports correlations among psychosocial adjustment variables by country. The correlations were consistently low among the variables and across countries. Emotional difficulties showed a weak negative association with self-rated health (ρ ranging from -.12 to -.25 across samples) and subjective wellbeing (-.07 to

-.18); the latter were positively associated with each other (.09 to .28). Alcohol use showed little association with any of the other variables in any of the settings, with all ρ for these associations within the range of -.11 to .11. This supported the use of these four variables as independent outcomes in the analysis.

Table 6.3. Polychoric correlations between psychosocial adjustment variables by sample.

	Emotional Difficulties				Self-rated Health				Subjective wellbeing			
	ET	IN	PE	VN	ET	IN	PE	VN	ET	IN	PE	VN
Emotional Difficulties	1	1	1	1								
Self-rated Health	-.12	-.22	-.23	-.25	1	1	1	1				
Subjective wellbeing	-.18	-.07	-.15	-.15	.15	.16	.28	.09	1	1	1	1
Alcohol Use	.07	.09	.11	.09	-.06	.01	-.06	.07	-.01	-.11	.01	.01

ET, IN, PE, VN are abbreviations for Ethiopia, India, Peru, and Vietnam, respectively

Class-specific means of the four psychosocial adjustment variables are reported in Table 4. In all four countries, significant differences in the emotional difficulties scale scores across classes were observed. In Ethiopia, Peru, and Vietnam, these differences followed a dose-response pattern in which emotional difficulty scores steadily increased from the lowest to highest victimization classes (2.02 to 4.46 in Ethiopia, 3.56 to 5.29 in Peru, 2.89 to 5.0 in Vietnam); averages across the classes were significantly different from one another. In India, all three victimization classes had similar emotional difficulty means (4.62-4.08), and all were significantly higher than the means of the not victimized class (2.85).

No significant differences in self-rated health were reported across classes in Ethiopia or India. In Peru, the high victimization class reported a small but significantly lower score in their perception of health relative to the sometimes

victimized class (3.82 vs. 3.66, $p<.001$). In Vietnam, no difference was reported between the not victimized and sometimes victimized classes, both of which reported slightly higher perceived health than the highly victimized class (3.54 vs. 3.23, $p<.001$).

While no significant differences in subjective wellbeing were observed in Ethiopia, mean scores trended toward decreasing satisfaction with higher victimization. This same trend was observed in Peru, where the differences were small but significant (6.31 vs. 5.88, $p=.002$). In Vietnam, the highly victimized class reported significantly lower subjective wellbeing (4.79) than both the not victimized (5.31, $p=.01$) and sometimes victimized classes (5.48, $p=.005$).

Significant differences in alcohol use by class were reported in all countries. In Ethiopia, alcohol use in the not victimized class (25.3%) was significantly lower than use reported in the sometimes (40.3%, $p=.018$) and highly (43.5%, $p=.002$) victimized groups; the difference in percent reporting use between the two victimized groups was not significant. In India, 29.8% of youth in the highly victimized group reported alcohol use, relative to the lower reported use by the other three classes (not victimized: 3.7%, $p=.002$; sometimes victimized – indirect: 5.5%, $p=.009$; sometimes victimized – direct: 2.1%, $p=.001$). Alcohol use was significantly higher in the highly vs. sometimes victimized class in Peru (44.7 vs. 22.7, $p=.002$), and significantly different in a dose-response relationship among all classes in Vietnam (not victimized vs. sometimes victimized: 20 vs. 28.9, $p=.01$; not victimized vs. highly victimized: 20% vs. 51.7%, $p<.001$; sometimes victimized vs. highly victimized, 28.9 vs. 51.7%, $p<.001$).

Table 6.4. Psychosocial adjustment scores by class.

Latent Class	Emotional Difficulties			Self-Rated Health			Subjective wellbeing			Any Alcohol Use		
	Mean	SE	X^2 p -value	Mean	SE	X^2 p -value	Mean	SE	X^2 p -value	%	SE	X^2 p -value
<i>Ethiopia</i>												
Not victimized	2.02 ^a	.22		4.06	.10		4.91	.13		25.3 ^{ab}	7.5	
Sometimes victimized	3.36 ^a	.20	<.001	4.04	.06	.834	4.65	.13	.126	40.3 ^a	6.7	.006
Highly victimized	4.46 ^a	.34		3.99	.08		4.63	.17		43.5 ^{ab}	6.4	
<i>India</i>												
Not victimized	2.85 ^{abc}	.21		4.04	.04		5.01 ^a	.14		03.7 ^a	0.7	
Indirect victimized	4.62 ^a	.27		3.99	.05		5.12 ^b	.16		05.5 ^b	3.2	
Direct victimized	4.10 ^b	.33	<.001	3.95	.04	.179	4.20 ^{ac}	.22	<.001	02.1 ^c	1.9	.011
Highly victimized	4.08 ^c	.34		4.04	.06		4.13 ^{abc}	.25		29.8 ^{abc}	8.5	

Emotional Difficulties ranges from 0 (no difficulty) to 10 (many difficulties); Self-rated Health ranges from 1 (very poor) to 5 (very good); Subjective wellbeing ranges from 1 (worst possible life) to 9 (best possible life)

^{abc}Superscripts indicate values between classes were significantly different from one another at $p < .05$ (note that nearly all reported values were significant at $p \leq .002$, with the exception of subjective wellbeing in Vietnam and alcohol use in Ethiopia, where differences were significant at $p < .02$).

Table 6.4. Psychosocial adjustment scores by class (continued)

Latent Class	Emotional Difficulties			Self-Rated Health			Subjective wellbeing			Any Alcohol Use		
	Mean	SE	X^2 p -value	Mean	SE	X^2 p -value	Mean	SE	X^2 p -value	%	SE	X^2 p -value
Peru												
Sometimes victimized	3.56 ^a	.14	<.001	3.82 ^a	.04	.001	6.31 ^a	.12	.002	27.7 ^a	2.8	.002
Highly victimized	5.29 ^a	.27		3.66 ^a	.04		5.88 ^a	.13		44.7 ^a	3.9	
Vietnam												
Not victimized	2.88 ^a	.12	<.001	3.54 ^a	.03	<.001	5.31 ^a	.09	.016	20.0 ^a	2.6	<.001
Sometimes victimized	3.99 ^a	.16		3.54 ^b	.04		5.48 ^b	.13		28.9 ^a	2.6	
Highly victimized	5.00 ^a	.18		3.23 ^{ab}	.06		4.79 ^{ab}	.18		51.7 ^a	5.0	

Emotional Difficulties ranges from 0 (no difficulty) to 10 (many difficulties); Self-rated Health ranges from 1 (very poor) to 5 (very good); Subjective wellbeing ranges from 1 (worst possible life) to 9 (best possible life)

^{abc}Superscripts indicate values between classes were significantly different from one another at $p < .05$ (note that nearly all reported values were significant at $p \leq .002$, with the exception of subjective wellbeing in Vietnam and alcohol use in Ethiopia, where differences were significant at $p < .02$).

6.5. DISCUSSION

6.5.1. KEY FINDINGS

We found a strong and consistent association between the experience of peer victimization and higher risk of both emotional difficulties and alcohol use in all four countries. Associations between peer victimization classes and both lower self-rated health and subjective wellbeing were in the expected direction, but smaller and concentrated primarily in the highest risk groups. In Ethiopia, previous research has reported potentially negative impacts of bullying but provided limited statistical support.^{47,48} Likewise, in Vietnam emotional distress associated with bullying has rarely been studied and has focused on suicidality.⁵⁰ Our findings provide a substantial contribution to the literature on bullying and mental health in these settings. In Peru and India, where the link between victimization and psychosocial adjustment is more clearly documented,^{51,54–58} our findings move beyond existing findings to document associations between emotional distress and *patterns* of victimization experienced by youth.

Contrary to the dose-response relationships between victimization and emotional distress and alcohol use observed in the other three countries, risk of emotional difficulties in India was elevated across all victimization classes relative to the non-victimized class. This finding the Indian sample, where distinctly direct and indirect victimization classes were observed, highlights the comparable impact of both forms of victimization and demonstrates the importance of recognizing and

intervening on non-physical forms of victimization, which may be less visible but equally damaging.^{113,114}

The higher proportion of youth using alcohol in highly victimized classes aligns with research from Peru⁵⁶ and elsewhere¹¹⁵ linking victimization with risky behaviors such as alcohol use. While a study in Vietnam did not observe this association, generalizability of those findings are restricted by the focus on only two schools in Hanoi.⁵⁰ On the other hand, that school-based study controlled for other family, school, and environmental factors contributing to alcohol use that we were unable to account for making the comparison between findings somewhat difficult. In the current study, we found significantly higher alcohol use not only in the highly victimized class, but also in the sometimes victimized class in both Ethiopia and Vietnam, again illustrating the potential harm associated even with lower intensity victimization that may be more difficult for outsiders to identify. That this same pattern did not hold in the Indian sample, where nearly all alcohol use was concentrated in the highest risk class, may be due to the much lower reporting of any alcohol use in the Indian sample. Future research should also include other risky behaviors that may be more relevant to Indian youth.

In general, the level of reported alcohol use in our study was low and largely reported as irregular or infrequent use. While the social acceptability of periodic alcohol use by adolescents varies across cultures and may not be viewed as problematic, the associations we observed do suggest that alcohol use could be an indicator of youth experiencing other problems, such as problematic peer relationships. Even if socially sanctioned, it is likely that early initiation of alcohol

use will be associated with other risky behavior and may predict continued substance use.¹⁰⁶⁻¹⁰⁹ Additionally, in early adolescence many health-related problems accompanying alcohol use have been shown to be related to periodic heavy use and associated impairment in judgement.¹¹⁶

It is possible that the attenuated associations we observed between victimization and both self-reported health and subjective wellbeing are due to social desirability, as these two questions were interviewer-administered rather than self-administered. Another concern is that the response period of the questions differed for different types of questions. Both the health and wellbeing questions asked about present perceptions whereas emotional difficulties were reported over the past six months; given that victimization exposure was assessed over the past year, it is possible that the attenuated associations reflect a weaker temporal relationship between victimization and current perceptions of health and wellbeing.

It is interesting that in the Indian sample there was significantly lower subjective wellbeing in the direct vs. indirect victimization classes, which differed primarily by form of victimization experienced; a similar distinction was observed between the sometimes victimized and highly victimized classes in the Vietnam sample. Subjective wellbeing has been less commonly studied in these settings than emotional distress; however, one Indian study that examined happiness of bullies, victims, and victims who also bully others (bully/victims) reported lower happiness among bully/victims than victims.⁵¹ As bully/victims have more externalizing symptoms and problem behaviors than either bullies or victims,¹¹⁷ it is possible that

they are disproportionately represented in the direct rather than indirect victimization class and that this distinction, which we were unable to measure, accounts for the difference in subjective wellbeing. As reports of life satisfaction are also thought to be more heavily influenced by what is salient at the time of the question than other aspects of subjective wellbeing,¹¹⁸ an alternative explanation is that experiences of physical aggression are more salient than relational aggression when youth consider their overall wellbeing. It is also possible that youth who are repeatedly physically victimized – a form of victimization that should be more visible to available supports – may have fewer other support factors to buffer the impact of victimization. Other peer and familial factors were not assessed in this study, but current findings highlight the need to explore these relationships further. Our findings do suggest that victimized youth in these settings are likely to report lower wellbeing and also lower perceived health. Future research to expand measurement of these constructs would be helpful to explore these relationships further and examine the relationship between objective and subjective health.

6.5.2. LIMITATIONS

As an exploratory study, our findings provide a meaningful contribution to the bullying victimization literature in LMIC but must be considered in light of several limitations. First, causal inference cannot be made using cross-sectional data; although the bulk of international literature makes it clear that victimization predicts later psychosocial adjustment, other research suggests this relationship is bidirectional and youth with poorer mental health are also more likely to be targeted for bullying victimization.^{58,119} It is also possible that mood-congruent

memories resulted in emotionally distressed youth recalling more negative peer experiences relative to well-adjusted youth, introducing an element of recall bias.

We have likely not accounted for all factors potentially confounding bullying victimization relationships. Models were restricted to minimal adjustment for variables including sex, which is one of the most commonly explored bullying covariates in the literature, and urban/rural community context, which is particularly relevant in LMIC.¹²⁰ This restriction was due in part to the availability of comparable variables across all four samples, earlier exploratory data analysis identifying these factors as relevant, and statistical modeling constraints. We have also not captured culturally unique forms of victimization. Additionally, both self-rated health and subjective wellbeing are likely multi-faceted constructs that incorporate appraisal of a number of aspects of health and wellbeing;^{83,84,97} in the present study, each construct was only assessed by a single question, limiting opportunity for nuance and variation.

6.5.3. CONCLUSIONS

The purpose of the current analysis was to examine how patterns of peer victimization experienced by adolescents in four LMIC settings were associated with a range of psychosocial adjustment indicators. Using previously developed latent class models conditioned on sex and community context, we found membership in more peer-victimized latent classes to be strongly and consistently associated with poor psychosocial adjustment. Our findings are well situated within a large body of evidence from high income countries and a growing number of findings from LMIC that suggest that regardless of location in the world, bullying and other aggressive

acts by peers are a strong and consistent indicator of risk for poor psychosocial adjustment. As these data were part of an ongoing study, we plan to continue this study in a future longitudinal analysis (when the data become available) by examining the extent to which latent classes in adolescence predict outcomes in emerging adulthood while controlling for baseline psychosocial adjustment. Our findings also present a foundation on which to expand local descriptions of peer victimization its interconnectedness with poor psychosocial adjustment.

Adolescence is a critical developmental period in which mental and behavioral ill health becomes a major contributor to the overall burden of disease.¹²¹ These problems in adolescence can impact developmental trajectories in emerging adulthood and over the life course.¹²² Improving our ability to identify and intervene on modifiable risk factors such as peer victimization is critical to providing young people a solid foundation for positive development into adulthood, yet research on bullying victimization is scarce in LMIC contexts. Our study illustrates the utility of a person-centered approach to better understand patterns of victimization, and demonstrates that even patterns of less visible behaviors have serious implications for poor psychosocial adjustment. These findings are particularly relevant for prevention efforts to sensitize parents, teachers, and other protective resources to recognize these behaviors and to understand that they are not just a harmless rite of passage.

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Muthen & Muthen

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CHAPTER 7: DISCUSSION

7.1 SUMMARY OF FINDINGS

The goal of this dissertation research was to explore experiences and outcomes of bullying victimization among youth in four low and middle income countries (LMIC). Our research approach included a combination of variable-centered and person-centered methods all aimed at expanding knowledge regarding bullying victimization in the four settings while addressing common limitations in existing research. In Aim 1, we explored country-level differences in prevalence of individual victimization behaviors and examined demographic correlates of total victimization and victimization subtypes. In aims 2 and 3 we transitioned to a person-centered approach, Latent Class Analysis (LCA), to explore how patterns of victimization behavior were experienced within individuals and how these patterns were associated with multiple psychosocial adjustment outcomes. Together, these analyses paint a clearer picture of bullying victimization in LMIC than existing research that uses only a single question to assess overall exposure. The below summary provides a synthesis of findings across the three aims.

7.1.1. THE COMMON EXPERIENCE OF BULLYING VICTIMIZATION

The first key finding from these three aims was that bullying victimization is common in all of the LMIC settings. In aim 1, the average adolescent in the Peru sample experienced nearly 6 victimizing events within the past year, while in Ethiopia, where reporting was lowest, the average adolescent still experienced two victimizing events. Using a person-centered approach in Aim 2, nearly half of all

youth were in classes described as either sometimes or highly victimized across all settings; in Peru, nearly half of youth were highly victimized. Additionally, although there was wide variation in report of any victimization exposure across Ethiopia, India, and Vietnam, the proportion of youth identified as not victimized and highly victimized using LCA appeared to be quite similar. This suggests that whereas previous research has indicated a wide range of bullying prevalence estimates across these populations (from 17% among youth in Addis Ababa, Ethiopia to over 60% in India),¹⁻⁶ the proportion of youth at the lowest and highest risk in these settings may be more similar than previously thought. Future work using LCA approaches in other settings would be helpful to examine how findings compare across countries with wide variations in prevalence measured using a single-question approach.⁷

7.1.2. BEHAVIOR DISTINCTIONS ACROSS COUNTRIES

Examining experiences of repeat victimization behavior in Aim 1, we observed a few notable differences across countries. First, reports of repeat physical victimization in India were much higher than those of the other countries. Additionally, whereas prevalence of most other behaviors was higher in India and Peru, repeated experiences of feeling uncomfortable due to staring was most common in Vietnam. Other behaviors, such as name calling, swearing, and property theft were particularly prevalent in both India and Peru.

Turning to how these different behaviors were experienced together in Aim 2, we identified a different number of patterns (i.e. classes) by country: two in Peru,

three in Ethiopia and Vietnam, and four in India. We found that bullied youth were generally likely to experience multiple forms of victimization; for example, in Ethiopia and Peru the classes were predominantly distinguished by severity. There were some exceptions, however. In India, the two mid-level classes were distinguished by “direct” and “indirect” victimization similar to categories commonly discussed in the literature. In Vietnam, where the sometimes victimized youth did appear more likely to experience some behaviors than others, their experiences included a blend of verbal, relational, and intimidation behaviors that would not be grouped together in typical researcher-defined subtype approaches. Likewise, aside from India, physical victimization appeared to be rarely experienced in isolation; rather, these acts tended to be concentrated in the highest exposure groups, suggesting that physical acts may be an indicator of more severe victimization exposure. These are all potentially meaningful patterns of victimization that are missed when using either a cut-off score or variable-driven subtype approach.

The identified classes behaved as expected when compared to caregiver report of youth bullying victimization, providing support for the validity of the latent classes. Previous findings also lend support for the meaningful differences observed in these classes. For example, the 42.6% of Peruvian youth falling in the highly victimized class maps onto previous estimates that 46% of boys and 48% of girls are bullied in Peru.⁸ The emergence of a direct victimization class in India aligns with the notably higher prevalence of physical victimization identified in India in aim 1. Previous studies in India have also reported what while verbal

bullying was the most common form, physical victimization was more prevalent than other forms of victimization;^{2,3,5} multiple aggression studies among Indian youth have also noted high rates of physical aggression.⁹⁻¹² In Vietnam, the pattern of behaviors experienced by the sometimes victimized youth maps onto ethnographic research describing bullying as the use of tactics to coerce a victim to do something, escalating to physical aggression only if the victim refuses.¹³ The use of verbal and relational aggression with little social exclusion would fit well within this framework of intimidation. The higher probability of eye contact in the sometimes victimized class in Vietnam also aligns with the findings from aim 1 that this behavior emerged as more prevalent among Vietnamese youth compared with the other countries, and could be a powerful intimidation technique in Vietnam, where averted eyes are a sign of respect and prolonged staring may be perceived as a challenge.^{14,15}

7.1.3. DEMOGRAPHIC CORRELATES OF VICTIMIZATION

School enrollment. School enrollment was assessed as a demographic correlate only in aim 1, primarily to address the question of whether subsequent analyses should be restricted to school-enrolled youth in line with most bullying research. We found that un-enrolled youth were either at similar or higher risk of victimization relative to their in-school peers. Given this, we proceeded with the full samples in the remaining analyses.

Child sex. Using a variable-centered approach in aim 1, we observed little difference in risk of overall victimization by sex everywhere but India, where the higher risk among boys appeared to be boys appeared to be particularly driven by

higher risk of physical and verbal aggression. In Peru and Vietnam, the lack of overall difference appeared to be driven by nearly equally strong associations in opposite directions among subtypes. Once we accounted for correlations in these experiences in aim 2, we found boys and girls were fairly equally represented in the non-victimized classes across countries, but among youth in victimized classes boys were more likely than girls to be in classes characterized by higher severity and physical victimization. Peru, where sex was not associated with class membership, was an exception to this trend. These findings could help to explain the often observed sex differences in physical but not relational victimization,¹⁶ if boys experience physical aggression *in addition to* other forms rather than as a unique experience. This could also explain why we did not find a significant sex difference between the direct and indirect classes of victimization in India, which is where existing research may have suggested we see the strongest sex differences. Where we did see a significant sex difference was in Vietnam, where girls were more likely than boys to be in the sometimes victimized class characterized by verbal and relational aggression and intimidation. Taken together, these findings suggest that *when* and *where* we observe sex differences in victimizing behavior is influenced by culture, and the notion that boys experience direct while girls experience indirect victimization is overly simplified.

Community context. In aim 1, differences in risk of victimization by urban and rural status were strongest in India, where our findings of lower overall prevalence among urban youth appeared to be driven primarily by lower prevalence of direct victimization. Here, our variable-centered and person-centered approaches agreed,

and both ran contrary to previous findings.²⁻⁵ It is possible that this is due to non-inclusion of cyberbullying, which is highly prevalent in India¹⁷ and likely to be more prevalent in urban settings where youth have better access to technology. Additionally, in aim 2 we observed that the distinction between urban and rural context may be more nuanced, such that among Indian youth who experience direct victimization, urban youth may be more likely to *also* experience indirect victimization. The approaches taken in aims 1 and 2 agreed in Peru as well, clearly indicating higher risk among urban youth that is supported by qualitative research¹⁸ and a large body of literature on violence in Latin America.¹⁹

Whereas in aim 1 we found only weak evidence for differences between urban and rural youth in Ethiopia, once we accounted for co-occurring victimization behaviors we were able to clearly identify urban contexts as a risk factor in Ethiopia for the types of victimization we measured. To the contrary, in Vietnam rural youth were more likely than urban youth to be in the highly victimized class compared to the sometimes victimized class. This trend would align with the current findings from India that physical victimization is higher among rural youth. These contrary findings about the role of urbanicity highlight the need to account for heterogeneity in urban experiences and suggest the potential for regional differences in the urban environment. Looking at the apparent lower risk for patterns involving physical aggression in India and Vietnam, it is possible that in densely populated urban areas there is simply less isolation in which to engage in overt aggressive acts without witnesses to intervene.

7.1.4. VICTIMIZATION AND PSYCHOSOCIAL ADJUSTMENT

As expected, we found a strong and consistent association between victimization and both emotional difficulties and alcohol use in all settings, expanding on findings from previous work in these countries^{1,5,20-22} and a large body of research elsewhere linking victimization to mental distress and risk behaviors.²³⁻⁵¹ Everywhere but India, these associations followed a clear dose-response pattern. The differences in India, where emotional difficulties were similarly increased across all forms of victimization and alcohol use was featured predominantly in the highest victimization class, may be explained by the different class structure in India where the two mid-level classes were distinguished by differing forms of similar severity. It is possible that the much lower reporting of alcohol use in India could explain the failure to find associations between the sometimes victimized classes and alcohol use. Alternatively, given previous research suggesting some patterns of victimization may be more strongly associated with certain outcomes than others,⁵² it is possible that the most highly victimized youth with combined direct and indirect victimization truly are more likely to turn to alcohol use.

Studies from high income countries have illustrated that indirect victimization can be just as - if not more - highly associated with poor psychosocial adjustment than direct victimization.^{53,54} Significantly higher emotional difficulties scores and alcohol use among not only the highly victimized but also the sometimes victimized youth in most contexts illustrates the potential harm associated even with lower intensity and non-physical victimization patterns. This is particularly relevant given that these forms may be more difficult to recognize and intervene on.

In addition to emotional difficulties and risk behaviors – aspects that would generally be considered signs of distress – we also assessed positive aspects of health and wellbeing as distinct components of mental health⁵⁵⁻⁵⁷ that are underexplored in bullying research but implicated in long-term morbidity and mortality, adaptive functioning, and fewer problem behaviors.⁵⁸⁻⁶⁵ Observed associations with these constructs were generally in the expected direction, but of lower magnitude and concentrated primarily in the highest risk groups. In Chapter 6 we discussed a variety of possible explanations for this, ranging from methodical factors⁶⁶ to a greater contribution of positive peer and family influences on these more positive aspects of wellbeing.^{67,68} Given the above considerations, our findings do suggest that victimized youth in these settings are likely to report lower wellbeing and may also report lower perceived health, but that other factors likely also contribute to these outcomes.

7.2. IMPLICATIONS FOR FUTURE RESEARCH

In 1999, a book presenting a cross-national perspective on the nature of school bullying was published, which included 21 country-specific chapters from predominantly high income countries and a single chapter dedicated to bullying in LMIC.⁶⁹ Nearly two decades later, there continues to be a dearth of literature on the nature and experiences of bullying victimization in LMIC that is only beginning to be addressed. Our findings contribute to a growing body of research showing that, while often overlooked, bullying victimization is a risk factor for poor psychosocial adjustment in LMIC.^{1,5,20-51} Research suggests that not only are both frequency of

victimization and exposure to multiple types of victimization associated with poorer psychosocial adjustment, but there may also be differences in outcome by pattern of victimization.^{52,70} Although available cross-cultural research suggests that the most common forms of victimization may differ by culture,^{38,46,50,71} we currently know very little about individual behavior prevalence or how victimizing behavior patterns may differ across countries.

Recognizing the limitations of variable-centered approaches, researchers are increasingly recommending person-centered approaches to identify meaningful differences among groups of young people that could be associated with different developmental trajectories.^{72,73} Using such an approach, we were able to identify unique patterns of behavior across the four countries that were more informative than a variable-centered approach that failed to account for the high correlations between forms of victimization. Our findings illustrate the role that person-centered research can play in shedding light on important cross-cultural differences to improve our understanding of the dynamics of these experiences in LMIC, where cultural and contextual factors may influence who is at highest risk of victimization. Future research should attempt to replicate these findings in the four study contexts and extend similar methods to additional contexts.

Additionally, given the limitations in using either a single question or a behavior scale, future research would be strengthened by combining both approaches. This would improve on our study by allowing researchers to clearly establish how different behaviors do or do not fit into youth perceptions of their own victimization status beyond what we were able to do. This combined approach

would also be more useful than our approach alone in understanding how differences in the construct may influence the wide prevalence estimates observed across countries.⁷

Because most bullying research in LMICs has been conducted using data from the Global School-based Student Health survey,⁷⁴ we know very little about victimization of youth not enrolled in school. Our finding that non-enrolled youth were equally or more likely to be victimized highlights the need to expand bullying research beyond the school environment to gain a better understanding of the full picture of risk in contexts where a large proportion of youth may not be in school. Nguyen and Tran⁷⁵ previously observed this in Vietnam, suggesting that an observed drop in estimated bullying prevalence at different time points may have been due to a change in whether the question was restricted to bullying at school. This also reflects Finkelhor's call to avoid confining the concept of bullying to the school environment.⁷⁶ While we were able to demonstrate similar overall risk regardless of school status, our study did very little to clarify the nature, location, and dynamics of victimization among unenrolled youth. Even among enrolled youth, our study makes no assumption that victimization occurred on the school grounds. Future research geared toward understanding differences in victimization experiences among enrolled and non-enrolled youth and high risk locations for victimization is needed.

In Chapter 3, we discussed the relative contributions of emic and etic research approaches to understanding cultural differences while moving toward a unified understanding. Our research has taken an etic approach, drawing on a likely

incomplete picture of bullying in each of the four countries to identify patterns of bullying victimization. The extent to which these differences in patterns are meaningful at a population level or are supported by qualitative work within these populations is a promising avenue for future emic research. For example, general descriptions of what bullying looks like, prompted by open-ended questions, would be helpful to compare the extent to which currently measured behaviors map onto descriptions provided by youth. Such research could also help to make meaning of current findings, such as providing youth perspectives on physical aggression in India, clarifying the extent to which the high prevalence of property victimization in Peru constitutes intentional aggression vs. opportunity, and providing explanation of the intentions behind aggressive staring. Likewise, although we uncovered interesting differences in victimization experiences among urban and rural youth, the different directions of these associations across contexts suggest a need for greater understanding of the social factors contributing to these differences. All of these are areas for future research that would be helpful to reflect on and make meaning of current findings.

Additional research including additional psychosocial adjustment outcomes would also be helpful. The present study included a basic assessment of emotional difficulties, but no corollary of behavior problems and no assessment of whether the bullied youth also bullied others. This would be an important distinction, as bully/victims have been shown to have more externalizing symptoms and problem behaviors than either bullies or victims.¹¹⁷ Lacking information about behavior problems, we treated alcohol use as an indicator of possible risk behaviors.

However, it is possible that if we included a more comprehensive assessment of behavior problems we may have seen a greater distinction in outcomes by form of victimization, as has been observed elsewhere.⁵² This may be particularly relevant given differences in access to and social acceptability of alcohol use across sites.⁷⁷

We also included minimal indicators of overall health and wellbeing, but future research using expanded measures and including qualitative youth perspectives on if and how bullying victimization relates to these outcomes would be helpful for hypothesizing causal mechanisms. For example, it is unclear why there was a significant difference in subjective wellbeing but no difference in emotional distress between the direct and indirect classes in India, although we hypothesized it may be that experiences of physical and more severe victimization are more salient when considering overall wellbeing.⁶⁶ Studies from elsewhere support the notion that mental wellbeing and distress are two separate dimensions of mental health that must be independently assessed and may have different socio-ecological predictors⁷⁸ requiring different types of interventions.⁷⁸⁻⁸⁰ Our findings, although basic, suggest that bullying may have a greater impact on emotional distress than perceptions of wellbeing in these contexts. Improved understanding of these dynamics, including factors buffering the effects of victimization among youth who appear to be thriving in spite of problematic peer relations, would be useful in guiding interventions fostering positive youth development.

7.3. IMPLICATIONS FOR PUBLIC HEALTH POLICY AND PRACTICE

Bullying has only recently been recognized at the policy level in most of the study countries, but recognition is slowly growing. In 2015, the Indian Central Board of Secondary Education acknowledged that bullying is a serious issue in the country even if not widely recognized, and issued a directive to all affiliated schools to form an anti-bullying committee.⁸¹ As reported by Nguyen and Tran,⁷⁵ since 2008 the Vietnamese Ministry of Education and Training has issued multiple directive geared toward increasing parent, school, and community cooperation, creating child friendly schools, and addressing violence in schools. In 2015, the Peruvian Ministry of Education hosted the Sixth World Congress on Violence in Schools and Public Policies, committing to the ideal of violence-free schools.⁸² However, in Ethiopia, corporal punishment by teachers is technically outlawed but remains a common practice, suggesting little support for implementing violence prevention programs.⁸³

While neither evaluated nor widely disseminated in LMIC, effective programs do exist to combat school bullying in high income countries. In an extensive meta-analysis including 59 reports on 30 intervention programs implemented in primarily European and US schools, Ttofi and Farrington found that school-based bullying prevention programs reduced victimization by 20-23%.⁸⁴ Interventions that appear to be the most effective are those that follow the general approach of the Olweus Bullying Prevention Program (OBPP),⁸⁵ in taking an ecological approach to addressing the issue at the student, classroom, school, and community levels.⁸⁵⁻⁸⁷ School-wide components involve establishing a coordinating committee, conducting

trainings, assessing the problem, holding regular staff discussions, introducing school rules against bullying to students and parents and improving supervision. In the classroom, the anti-bullying rules are posted and teachers lead class discussions around bullying. Individually, strategies focus on supervision and immediate intervention. At all levels, parent engagement is important, as is engaging the community through participation on the prevention committee, community partnerships, and wider dissemination of best practices.⁸⁵

Findings from the current study may be used to inform policies and programs at multiple levels. First, these findings regarding the high reporting of victimization have implications for the need to establish and enforce policies that protect young people from peer aggression. To date, such initiatives appear to be school-based; however, a fully administered program such as the OBPP aims to promote a more positive environment overall and would engage community members in planning and implementation, which would be a good starting place.

Additionally, our work would support a call for parallel community-led initiatives to protect unenrolled youth, as well as stronger collaborations between schools and other priority care platforms for youth both in and out of school. For example, indicators of distress in the present study included complaints of somatic symptoms such as headaches, stomach aches, and sickness, suggesting the probability that some youth who experience emotional distress associated with bullying victimization will present with somatic complaints in primary care. Primary care providers are a potentially untapped resource in these settings for identifying young people who are struggling and provide education, support, and

resources for the youth and their parents.⁸⁸⁻⁹⁰ This requires that primary care providers be knowledgeable about how to recognize and talk about bullying, as well as be aware of referral resources and prevention efforts at school or in the community. Additionally, primary care providers may already observe the impacts of bullying victimization and could be a rich source of information for adding to our understanding of symptoms these struggling youth are likely to present with.

To support intervention strategies, parents, teachers, and others in key roles serving youth need to recognize that bullying victimization is not a harmless rite of passage but in fact a problem with serious health consequences; findings from the current study contribute to this body of evidence. Training and information must draw on a more complete picture of victimization in these contexts so that potential supports can be particularly sensitized to recognize and intervene on patterns of victimization that may be less visible, such as indirect victimization in India and the apparent in-group victimization that may be somewhat more prominent among girls in Vietnam. While the simple assumption that boys experience physical while girls experience relational victimization is not supported by our research; it is important to include such information in trainings with both students and adults so that boys who experience relational aggression do not feel stigmatized in reporting these experiences. It would also be important to have additional information about unsupervised “hot spots” where victimization is likely to occur; here, our research falls short but suggests the need to identify risky areas outside of school, particularly in rural settings where fewer people are available to intervene. Once identified, local strategies could be developed to reduce congregating in these areas.

While the general ecological principles of the OBPP are likely transferable across settings, these interventions were developed based on Western concepts of bullying dynamics and need to be appropriately adapted based on considerations relevant to the culture and context. The above adaptations for understanding relevant locations, behavioral patterns, and characteristics of those likely to be at highest risk are merely a starting point. Planning for implementation should also involve strategic planning for assessing fidelity and effectiveness.

7.4. STRENGTHS AND LIMITATIONS

The research outlined in this proposal improves on existing research and contributes to the literature in a number of ways. First, we expanded the scope of research on bullying victimization in four countries where existing knowledge is sparse and most studies are restricted to school-based samples from only a few schools in predominantly urban settings.^{1-5,13,20-22,91,92} Inclusion of a scale assessing nine victimizing behaviors enabled us to provide insights into potential cultural and contextual differences in behaviors experienced. The use of hurdle modeling in aim 1 allowed us to avoid using arbitrary cut-off scores, while in aims 2 and 3 we were able to use latent class approaches to account for the high correlation between victimization experiences.

Along with the strengths outlined above, this research has a number of important limitations. First, by conducting a cross-cultural analysis of four settings we were unable to account for potentially meaningful influences of characteristics that were not comparable across the four settings. Instead, we included a minimal

number of standard demographic characteristics to capture general trends in exposure. The Young Lives team has previously taken a similar approach, noting that while using only a set of risk factors that are standard across the four settings may increase the chance of residual confounding, this risk is at times outweighed by the benefit of producing more comparable analyses.⁹³ These potentially important exclusions have resulted in a largely exploratory series of analyses which provide interesting insights from which to build future research, but cannot be assumed to account for all relevant variables influencing bullying dynamics. We also conducted all analyses separately by country, meaning that while we have made comparisons of general trends and observations, scale scores and class structures cannot be directly compared across countries.

The bullying experience questionnaire, the SAHA-PVS, did not explicitly assess the power dynamics of the relationship in which the acts of peer aggression occurred, which is generally viewed as a component of bullying definitions.⁹⁴ In Chapter 3, we discussed the measurement issues in bullying research and concluded that while poor measurement of the power imbalance is a limitation, a *behavior-based* approach is generally supported by researchers.⁹⁵⁻⁹⁷ Additionally, the SAHA-PVS has been described as a measure of bullying, has demonstrated satisfactory reliability, and has consistently performed as expected within a nomologic network⁹⁹ in multiple contexts.^{22,100-104} In the current study it also performed as expected and the construct validity of classes was assessed using a caregiver-reported bullying question. Even so, misclassification of balanced peer aggression as bullying victimization is likely to have occurred. But if bullying victimization is

associated with greater psychosocial impairment than power-balanced peer aggression as has been suggested elsewhere,¹⁰⁵ the result would be attenuation of the association between bullying and study outcomes, rather than observing an association where none exists. Given the above, we have tried to find a middle ground in which we used an element of repeat behaviors to exclude recording of inconsequential experiences, yet maintain Finkelhor's⁷⁶ argument that even single instances of victimization recalled and reported up to a year later are likely to be problematic and perceived by the victim as an act of bullying.

While the use of a behavior scale allows for exploration of individual behaviors, it also makes the important assumption that the questions represent the range of peer victimizing experiences these settings. The SAHA-PVS does not explicitly ask questions about sexual victimization or cyberbullying. It also does not assess potentially culturally unique forms of bullying; for example, mocking a student by writing his/her parents' names on the blackboard at school,¹⁰⁶ engaging in a conversation that the student thought was serious but was in fact a means of ridicule,¹ or "asking" a peer to do something he/she otherwise would not do.¹³ It is possible that these experiences would be captured under existing SAHA-PVS items; for example, calling names, making fun of the youth for some reason, staring, or hurting physically in other ways. However, as with a single broad question, even within these questions there may exist a range of motivations, methods, or experiences that we have failed to capture.

The data used in the current study were collected within a study of childhood poverty, such that the samples are not nationally representative but rather

oversampled for high poverty areas.¹⁰⁷ Therefore, no findings from the present study can be generalized to the entire country; rather, these findings are likely to be generalizable to other young people growing up in poverty in these settings. However, comparisons between the YL samples and existing national demographics suggest that the samples reflect the wide range of experiences of children growing up in the study countries.^{108–111} In general, findings on the risk of victimization by SES are mixed; a meta-analysis has shown a modest association between victimization and low SES, but it is likely driven by community-level dynamics that are concentrated in disadvantaged areas rather than a function of individual SES.^{112–115} Given the restricted SES ranges of study participants, the low clustering of victimization in these samples, and preliminary explorations showing individual SES was not informative, we did not include it as a study variable.

The strength of the LCA approach lies in moving beyond variable-based analysis to meaningfully model heterogeneity in response patterns and account for high correlations among different forms of bullying victimization. However, because classes are unobserved and class enumeration is dependent on statistical power and researcher judgment, LCA is a useful exploratory tool but causal conclusions cannot be drawn.⁷³ Because the YL study was not specifically focused on peer victimization, a large proportion of youth reported no victimization experiences; this homogeneity may have also restricted class enumeration. Additionally, the Peru sample was smaller than the others, reducing statistical power for the analyses of that sample. Future work with a large, rich dataset of

youth engaged in bullying dynamics may elucidate additional patterns of victimization.

Because the psychosocial adjustment outcomes were measured cross-sectionally we are unable to infer causality. Although the bulk of international literature makes it clear that victimization predicts later psychosocial adjustment, research also suggests that this relationship is bidirectional and youth with poorer mental health are also more likely to be targeted as bullying victims.^{92,116} It is also possible that mood-congruent memories resulted in emotionally distressed youth recalling more negative peer experiences relative to well-adjusted youth, introducing an element of recall bias. Additionally, the models estimating these outcomes were minimally adjusted. This restriction was due in part to the availability of comparable variables across all four samples, earlier exploratory data analysis identifying these factors as relevant, and statistical modeling constraints. As an exploratory study, our findings provide a meaningful contribution to the bullying literature in LMIC. However, we have likely not accounted for all factors potentially confounding these relationships.

Finally, research in bullying has often explored differences in outcomes between pure bullies, pure victims, and combined bully/victims (i.e. bullies who are also victimized). Findings generally suggest that these groups have different risk profiles and outcomes, with bully/victims often having worse outcomes than other groups.^{31,112,117-119} Because the YL study did not assess perpetration of bullying, the youth identified as victims likely represent a blend of pure victims and bully/victims. It is unclear whether these two groups of youth would experience

different patterns of victimization and how this could have influenced associations between victimization patterns and psychosocial adjustment.

7.5. CONCLUSION

In this dissertation research, we have tried to strike a balance between acknowledging the potential for local differences while still conducting a comparable, yet stratified, analysis across the four settings. The limitations described above restrict our ability to draw conclusions about the causal relationship between bullying victimization and psychosocial adjustment in these four settings, yet our findings are well situated within a large body of evidence from high income settings and a growing number of findings from LMIC that suggest that regardless of location in the world, bullying and other aggressive acts by peers is a strong and consistent risk factor for poor psychosocial adjustment. As these data were part of an ongoing study, in a future analysis we plan to address some of the limitations of the current cross-sectional analysis by examining the extent to which latent classes in adolescence predict outcomes in emerging adulthood while controlling for baseline adjustment. Our findings present a strong foundation on which to expand local descriptions of bullying and possible causal mechanisms through richer and more in-depth qualitative research, and will be a useful contribution for designing and evaluating relevant intervention programs.

7.6. REFERENCES

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secondary education. The longitudinal TRAILS study. *BMC Public Health*. 2011;11(1):440.

APPENDIX A: DESCRIPTION OF VARIABLES USED

The below report describes the variables used in the analysis including the questions posed, response options, and their source (caregiver interview, interviewer record, youth interview, youth self-administered questionnaire). For some questions, such as the alcohol question, the introductory wording was slightly modified to provide local examples. Descriptions of local modifications are included in <>.

A.1. PEER VICTIMIZATION

SOCIAL AND HEALTH ASSESSMENT PEER VICTIMIZATION SCALE

Other young people can be great. But they also can be really nasty. For each statement, choose whether this happened to you 'never', 'once', '2-3 times' or '4 or more times' during the past year. We want to know whether other young people...

1. called you names or swore at you
2. tried to get you into trouble with your friends
3. took something without permission or stole things from you
4. made fun of you for some reason
5. made you uncomfortable by staring at you for a long time
6. punched, kicked or beat you up
7. hurt you physically in some other way
8. tried to break or damaged something of yours
9. refused to talk to you or made other people not talk to you

Response Options: Never, Once, 2-3 times, 4 or more times

Source: Self-administered questionnaire

CAREGIVER REPORT OF YOUTH BULLYING EXPOSURE

1. Has NAME ever been bullied by peers?

Response options: yes, no, NK, N/A

Source: caregiver interview

A.2. DEMOGRAPHICS

1. Sex (*Recorded by interviewer as male or female*)
2. Community Context (*Defined by country team as urban or rural*)

3. Are you currently enrolled in school?

Response options: yes, no, NK, N/A

Source: youth interview

A.3. PSYCHOSOCIAL ADJUSTMENT

EMOTIONAL DIFFICULTIES

The last part of the questionnaire looks at sadness and other difficulties that many people experience at some point in their lives. As you answer, think about how things have been for you in the last 6 months. It would be great if you could try to answer all the questions even if you are not sure of the answer or if the question seems stupid.

1. You worry a lot
2. You get a lot of headaches, stomach aches or sickness

3. You are often unhappy, downhearted or tearful
4. You are nervous in new situations
5. You have many fears, you are easily scared

Response options: “not true for me”, “a little true for me”, “certainly true for me”

Source: Self-administered questionnaire

ALCOHOL USE

Many people in <country> drink alcohol like beer (<local examples>) or spirits (<local examples>). The next questions ask you about your experiences with alcohol.

1. How often do you usually drink alcohol? (Choose only one option)

Response options:

- I never drink alcohol
- hardly ever
- only on special occasions (for example, weddings, funerals <Tet holidays, public holidays>*)
- at least once a month
- at least once a week
- every day

*The additional examples were included in Vietnam only

Source: Self-administered questionnaire

SELF-REPORTED HEALTH

1. In general, how is your health?

Response options: very poor, poor, average, good, very good, NK

Source: Youth interview

SUBJECTIVE WELLBEING

Field worker: Show picture of ladder

1. There are nine steps on this ladder. Suppose we say that the ninth step, at the very top, represents the best possible life for you and the bottom represents the worst possible life for you. Where on the ladder do you feel you personally stand at the present time?

Response options: step numbers 1-9, NK, NA

Source: Youth interview

APPENDIX B: MEASUREMENT INVARIANCE ACROSS COUNTRIES

Comparison of scale scores across groups requires assessing level of measurement invariance, or the extent to which the scale measures the same latent construct across groups. *Configural* invariance is met if a set of observed indicators has the same pattern of relationships to a latent construct across groups; *metric* invariance requires similar factor loadings across groups; and *scalar* invariance is met when both loadings and intercepts are equal across groups.¹

We assessed measurement invariance across countries using multigroup alignment optimization² in Mplus 7.3.³ This approach estimates a model that fits as well as the configural model by allowing factor means, variances, loadings, and item intercepts to be set at values that minimize the total amount of non-invariance using a simplicity function.² Models resulting from this approach have been shown to agree with models estimated using a traditional confirmatory factor analytic approach.² Analyses were conducted for both the Social and Health Assessment Peer Victimization Scale (SAHA-PVS)^{4,5} and the Emotional Difficulties subscale of the Strengths and Difficulties Questionnaire (SDQ).⁶ Because the SAHA-PVS items were treated as both categorical and binary, invariance was assessed for each approach.

B.1. MEASUREMENT INVARIANCE OF THE PEER VICTIMIZATION SCALE

Factor loadings for the 9-item scale using the original, 4-point categorical response options are reported in Table B.1. Alignment analysis identified only two violations of metric invariance: lower factor loadings for name calling in Peru and staring in Vietnam relative to the other countries. This suggests that while these

two items did still load onto the latent construct, the construct accounted for less of their variance than it did elsewhere. This is supported by the exploratory analysis in Chapter 4, where endorsement of name calling was much higher in Peru and endorsement of staring in Vietnam was higher than in other countries, breaking the overall pattern of India and Peru having higher prevalence of all items. Even accounting for these violations of invariance, the rank order of factor means follows the rank order of scale scores reported in Chapter 4, with the highest score in Peru and lowest scores in Ethiopia and Vietnam. Not reported here is the item thresholds, which did indicate violations of scalar invariance.

Table B.1. Factor loadings and approximate measurement invariance for SAHA-PVS categorical items.

	Ethiopia	India	Peru	Vietnam
Punched	1.691	1.566	1.773	2.425
Hurt Physically Other	1.577	1.994	1.489	2.053
Called Names	1.466	1.806	1.003*	1.721
Made Fun	1.098	1.340	1.543	1.482
Trouble with Friends	1.545	1.565	1.389	1.465
Refused to Talk	1.532	1.496	1.228	1.442
Stole Something	1.113	1.173	1.256	0.996
Damaged Something	1.476	1.297	1.620	1.431
Uncomfortable Staring	1.472	1.164	1.356	0.861*
Comparison of Factor Means ¹	-1.623 ²	-0.353	0.000	-1.266 ²

*Indicates groups for which approximate measurement invariance does not hold.

¹Values indicate the difference between the country's factor mean and the highest factor mean (fixed to zero) for comparison.

²Indicates difference between means was not significant at $p < .05$.

Factor loadings of the SAHA-PVS using binary “no” vs. “any” exposure are reported in Table B.2. Alignment analysis suggested measurement invariance held

for all factor loadings across all groups, supporting metric invariance. The rank order of factor means is consistent with that reported in Table B.1 above. Not reported here is the item thresholds, which did indicate violations of scalar invariance.

Table B.2. Factor loadings and approximate measurement invariance for SAHA-PVS binary items.

	Ethiopia	India	Peru	Vietnam
Punched	1.510	1.516	1.870	2.399
Hurt Physically Other	1.369	2.107	1.417	1.946
Called Names	1.544	1.741	0.858	1.469
Made Fun	1.085	1.305	1.399	1.517
Trouble with Friends	1.565	1.478	1.321	1.366
Refused to Talk	1.371	1.354	1.095	1.394
Stole Something	1.072	1.057	1.429	0.845
Damaged Something	1.367	1.227	1.555	1.368
Uncomfortable Staring	1.349	1.031	1.290	0.783
Comparison of Factor Means ¹	-1.730 ²	-0.579	0.000	1.457 ²

Note: approximate measurement invariance held for all item loadings across all groups.

¹Values indicate the difference between the country's factor mean and the highest factor mean (fixed to zero) for comparison.

²Indicates difference between means was not significant at $p < .05$.

B.2. MEASUREMENT INVARIANCE OF THE SDQ EMOTIONAL DIFFICULTIES SCALE

Factor loadings of the SDQ emotional difficulties subscale are reported in Table B.3. Alignment analysis suggested measurement invariance held for all factor loadings across all groups, supporting metric invariance. The factor mean was significantly higher in Peru than all other countries, where no significant differences

were observed. Not reported here is the item thresholds, which did indicate violations of scalar invariance.

Table B.3. Factor loadings and approximate measurement invariance for SDQ items.

	Ethiopia	India	Peru	Vietnam
Worry a lot	1.403	1.349	0.937	1.293
Headaches, stomach aches, sickness	1.119	1.092	1.110	1.143
Unhappy, downhearted, tearful	1.351	1.693	1.596	1.555
Nervous in new situations	1.514	1.029	1.104	1.241
Many fears, easily scared	1.063	1.295	1.383	1.229
Comparison of Factor Means ¹	-0.754 ²	-0.787 ²	0.000	-0.702 ²

Note: approximate measurement invariance held for all item loadings across all groups.

¹Values indicate the difference between the country's factor mean and the highest factor mean (fixed to zero) for comparison.

²Indicates difference between means was not significant at $p < .05$.

B.3. REFERENCES

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The data used in this dissertation come from Young Lives, a 15-year study of the changing nature of childhood poverty in Ethiopia, India, Peru and Vietnam (www.younglives.org.uk). Young Lives is funded by UK aid from the Department for International Development (DFID), with co-funding from Irish Aid. The views expressed here are those of the author. They are not necessarily those of Young Lives, the University of Oxford, DFID or other funders.

CURRICULUM VITAE

Amanda J. Nguyen (née Parker)

PERSONAL INFORMATION

Birthdate: June 29, 1983
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EDUCATION

JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH. Baltimore, MD 2016
Doctor of Philosophy in Public Health, Department of Mental Health.
Advisor: Judith K. Bass Concentration: Global Mental Health

UNIVERSITY OF DENVER GRADUATE SCHOOL OF PROFESSIONAL PSYCHOLOGY. Denver, CO 2007
Master of Arts in Psychology Concentration: International Disaster Psychology

PACIFIC UNION COLLEGE. Angwin, CA 2004
Bachelor of Science in Psychology

PROFESSIONAL EXPERIENCE

Research Assistant, June 2013 - present
Applied Mental Health Research Group (AMHR), Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

Technical Advisor, September 2013 – May 2016
Chicago Hispanic Health Coalition, Chicago, IL

Research Consultant, July - August 2014
Medicines Sans Frontieres, Republic of Chechnya, Russian Federation

Senior Student Counselor, December 2011 - July 2012
Royal Melbourne Institute of Technology Vietnam (RMIT Vietnam), Hanoi, Vietnam

Coordinator of Student Services, November 2010 - November 2011
Tan Tao University (TTU), Duc Hoa, Long An Province, Vietnam

Social Worker 3, September 2008 - June 2010
Child and Family Welfare Services, Children's Administration, Washington State Department of Social and Health Services, Seattle, WA

Shelter Counselor/Case Manager, September 2007 - April 2008
Youth Haven Emergency Shelters, Friends of Youth, Redmond, WA

International Mental Health Intern, June 2007 - August 2007
Expert Centre for Mental Health and HIV/AIDS, International Aid Network, Belgrade, Serbia

Wellness Intern, August 2006 - May 2007
Colorado AIDS Project, Denver, CO

Group Therapist, December 2006 - May 2007
Offense-Specific Treatment Services, Progressive Therapy Systems, Denver, CO

Intake and Assessment Specialist, December 2005 - May 2007
18th District Juvenile Assessment Center, Weld Adolescent Resources, Englewood, CO

Victim Advocate, October 2005 - August 2006
Victim Assistance Unit, Denver Police Department, Denver, CO

Program & Research Assistant, July 2004 - August 2005
Department of Psychology and Social Work, Pacific Union College, Angwin, CA

GRANTS & FELLOWSHIPS

2014-2016	PI: Philip Leaf	ONGOING
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NIMH T32
“Child Mental Health Services and Service Systems Research Training Program”
The goal of this program is to provide doctoral students and post-doctoral fellows a public health perspective on the study of the need for and use of services for children and adolescents with mental disorders. The grant provides an annual stipend and full tuition support.

2013-2016	PI: Fannie Fonseca-Becker	ONGOING
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Johnson & Johnson Community Healthcare Scholars Program
The goal of this program is to provide doctoral students with training and experience as technical advisors to community healthcare organizations. The scholars work closely with community partners to build in-house capacity for monitoring and evaluation.

PUBLICATIONS

Nguyen AJ, Feo C, Idrisov K, Pintaldi G, Bolton P, Bass J. (In press). Mental health and psychosocial problems of people in Grozny, Chechnya: a brief qualitative study. *Conflict and Health*.

Nguyen AJ, Haroz EE, Mendelson T, Bass JK. (2016). Symptom endorsement and sociodemographic correlates of post-natal distress in three low-income countries. *Depression Research and Treatment*, vol. 2016, Article ID 1823836.

Murray LK., **Nguyen AJ**, & Cohen JA. (2014). Sexual victimization. *Child and Adolescent Psychiatric Clinics of North America*, 23(2).

Manuscripts in Progress and Under Review

Kaysen D, Rhew IC, Bittinger J, Bedard-Gilligan M, Garberson L, Hodge K, Lindgren K, **Nguyen AJ**, Logan DE. Comparing prevalence and factor structure of PTSD in DSM-5 vs.

DSM-IV in a national sample of sexual minority women. *Under review at Journal of Anxiety Disorders.*

Eftekhari B, Dejman M, Mirabzadeh A, Malekafzali H, Mohammadi F, Forouzan AS, Saijadi S, Falahat K, Habibi E, **Nguyen AJ**, Bass J. Introduction of a community based participatory model for women's mental health promotion in Iran: A-Z. *Under review at the American Journal of Public Health.*

Nguyen AJ, Lee C, Bolton P. Mental health interventions for Myanmar people: current evidence and future directions. *In prep.*

Nguyen AJ, Bradshaw CP, Townshend L, Bass J. Prevalence of bullying behaviors and correlates of repeat peer victimization in four low-resource countries. *In prep.*

Nguyen AJ, Bradshaw CP, Gross A, Townshend L, Bass J A latent class approach to understanding patterns of peer victimization in four low-resource settings: Results from the Young Lives Study. *In prep.*

Lloyd SW, **Nguyen AJ**. The relationship between child maltreatment and mental health across the lifespan, looking beyond mental health diagnosis. *In prep.*

Nguyen AJ, Murray LK, Haroz EE, Bass JK, Bolton P. Barriers and facilitators to the scale-up of an evidence-based mental health intervention in Northern Iraq. *In prep.*

Nguyen AJ, Sciammarella E, Barnes E, Fonseca-Becker F. Evaluation of a community-based health promotion program to address childhood obesity among Latino children in Chicago's lower west side. *In prep.*

REPORTS, MANUALS, AND TECHNICAL GUIDELINES

Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, and World Bank (2014). *Psychotherapy in Areas of Armed Conflict: Recommendations for Training, Implementation, Supervision, and Monitoring*. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health.

Inter-Agency Standing Committee (IASC) Reference Group for Mental Health and Psychosocial Support in Emergency Settings (2015). *Nepal Earthquakes 2015: Desk Review of Existing Information with Relevance to Mental Health and Psychosocial Support*; Kathmandu, Nepal. Available at: <http://mhinnovation.net/resources/nepal-earthquake-2015-desk-review-existing-information-relevance-mhpss#.Vs8MsJwrK70>

Bradshaw C, **Nguyen AJ**, Kane JC, & Bass J. (2013). *Social Inclusion of Youth with Mental Health Conditions. A Report for the United Nations, Division for Social Policy and Development*, New York, NY. Available at: <http://www.un.org/esa/socdev/documents/youth/youth-mental-health.pdf>

Bullock F. & **Parker AJ**. (2005). *Hunger: Food insecurity of kids, families, and the elderly*. Angwin, CA: Pacific Union College.

NONGOVERNMENTAL ORGANIZATION REPORTS

Nguyen, AJ, Lee C, Haroz E, Murray L, Bolton P. (2015). Victims of Torture Fund extension phase final report on activities in Iraq: Expansion of the Common Elements Treatment Approach for survivors of torture and violence and associated research. A report for the USAID Victims of Torture Fund.

PRESENTATIONS

Nguyen AJ, Bradshaw CP, Townsend L, Gross A, Bass J. (April 2016). A latent class approach to understanding patterns of peer victimization in four low-resource settings. Poster presentation at the 2016 Moore Center for the Prevention of Child Sexual Abuse annual symposium, Baltimore, MD. *Winning poster (2nd place - \$75 award).*

Nguyen AJ, Bradshaw CP, Bass J. (April 2016). Profiles of bullying victimization in four low-resource settings. Results from the Young Lives study. Oral presentation at the 2016 Society for Research on Adolescence Biennial Meeting, Baltimore, MD.

Nguyen AJ, Sciammarella E, Barnes E, Fonseca-Becker F. (November 2015). Empowering Latino children and parents in Chicago's lower west side to adopt healthy lifestyles for the prevention of childhood obesity: A community/academic partnership measures their progress. Oral presentation at the 2015 annual meeting of the American Public Health Association (APHA), Chicago, IL.

Haroz EE, Murray LK, **Nguyen AJ**, Bass JK, Dorsey S, Bolton P (September 2015). Development and validation of implementation measures for low-resource global contexts. Oral presentation at the 3rd Biennial Society for Implementation Research Collaboration conference, Seattle, WA.

Murray LK, Dorsey S, Haroz EE, Lee C, **Nguyen AJ**, Bolton P (September 2015). Beyond training and moving to sustainability globally: A train-the-trainer approach for low-resource contexts. Oral presentation at the 3rd Biennial Society for Implementation Research Collaboration conference, Seattle, WA.

Feo C, **Nguyen AJ**, Idrisov K, Pintaldi G, Bolton P, Bass J. (June 2015). Mental health and psychosocial problems of people in Grozny, Chechnya: a brief qualitative study. Oral presentation at the 14th Conference of the European Society for Traumatic Stress Studies (ESTSS), Vilnius, Lithuania.

Feo C, **Nguyen AJ**, Idrisov K, Bolton P, Bass J, Pintaldi G. (May 2015). Developing culturally adapted Mental Health (MH) tools through a brief qualitative study on Mental Health and Psychosocial (MHPS) problems of people in Grozny, Chechnya, July-August 2014. Poster presentation at the Médecins Sans Frontières Scientific Day 2015.

Haroz EE, **Nguyen AJ**, Murray LK, Bass JK, Bolton P. Development and testing of implementation measurement instruments: A mixed methods study in Iraqi Kurdistan and Myanmar. Oral presentation at the 2015 meeting of the Society for the Study of Psychiatry and Culture (SSPC), Providence, RI.

Nguyen AJ. (December 2014). Needs, Services, and Scaling Up in Global Mental Health. Invited panelist at the joint Singapore University of Technical Design – Massachusetts

Institute of Technology Workshop “STS in Asia: Creating Scientific Communities, Pedagogies, and Citizen Science”, Massachusetts Institute of Technology, Cambridge, MA.

Nguyen AJ, Feo C, Idrisov K, Pintaldi G, Bolton P, Bass J. (December 2014). An exploration of psychosocial issues affecting young people in Chechnya: results from a brief qualitative study. Oral presentation at the European Conference on Youth Mental Health, Venice, Italy.

Lloyd, S. W. & **Nguyen, A.** (February, 2014). The contribution of child maltreatment exposure to poor mental health functioning in adulthood, looking beyond diagnostic criteria. Poster presented at the 2014 Delta Omega Poster Competition at Johns Hopkins School of Public Health, Baltimore, MD.

Parker, A. (May, 2007). Forced maternity: Facilitating attachment in mother-child dyads. Poster presented at the annual University of Denver Graduate School of Professional Psychology Research Consortium, Denver, CO.

Fulton, A. & **Parker, A.** (July, 2004). Effects of motivation and rehearsal adequacy on retrieval induced forgetting. Poster presented at the annual conference of the American Psychological Association, Honolulu, HI.

Parker, A., Burke, R., Currier, B., & Fulton, A. (April, 2003). The effect of directed forgetting on retrieval induced forgetting. Poster presented at the annual conference of the Western Psychological Association, Vancouver, BC, Canada.

TEACHING/INVITED LECTURES

- 2016 **Guest lecturer:** Non-Western cultures and low-resource issues. Prof. Lisa Townsend, Johns Hopkins Bloomberg School of Public Health.
- 2016 **Teaching assistant:** Social, psychological, and developmental processes in the etiology of mental disorders. Prof. Lisa Townsend, Johns Hopkins Bloomberg School of Public Health.
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- 2007 **Panelist:** Our bodies...Their battleground: Gender-based violence during conflict. University of Denver Sexual Assault Awareness Week, Denver, CO.

- 2005 **Co-instructor:** Marriage and the Family. Prof. Aubyn Fulton, Pacific Union College.
- 2004 **Teaching assistant:** Learning & Memory. Prof. Aubyn Fulton, Pacific Union College.
- 2003 **Teaching assistant:** Research Design. Prof. Bruce Bainum, Pacific Union College.

HONORS & AWARDS

- 2016 **Poster competition winner (2nd Place).** Moore Center for the Prevention of Child Sexual Abuse, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
- 2016 **Alberta Szalita Award.** This award is made annually to an outstanding doctoral student in the Department of Mental Health. Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
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LEADERSHIP POSITIONS

- 2015-2016 **President ex Officio:** Behavioral Health International Group (BHIG), Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.
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